Paper
TRADE JOURNAL
PUBLISHED WEEKLY
JANUARY 19, 1950

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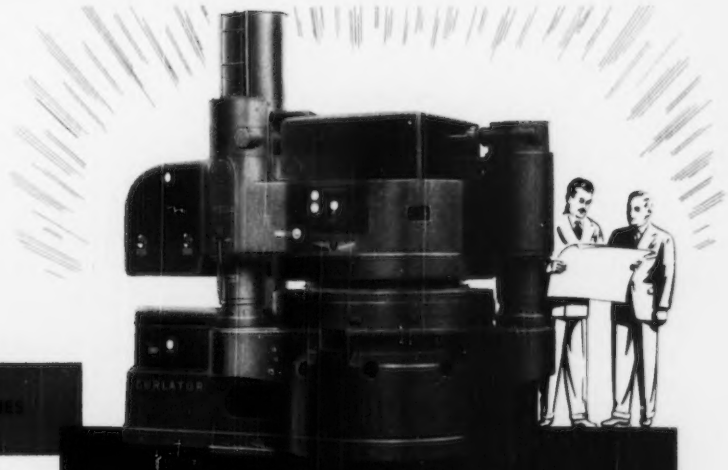

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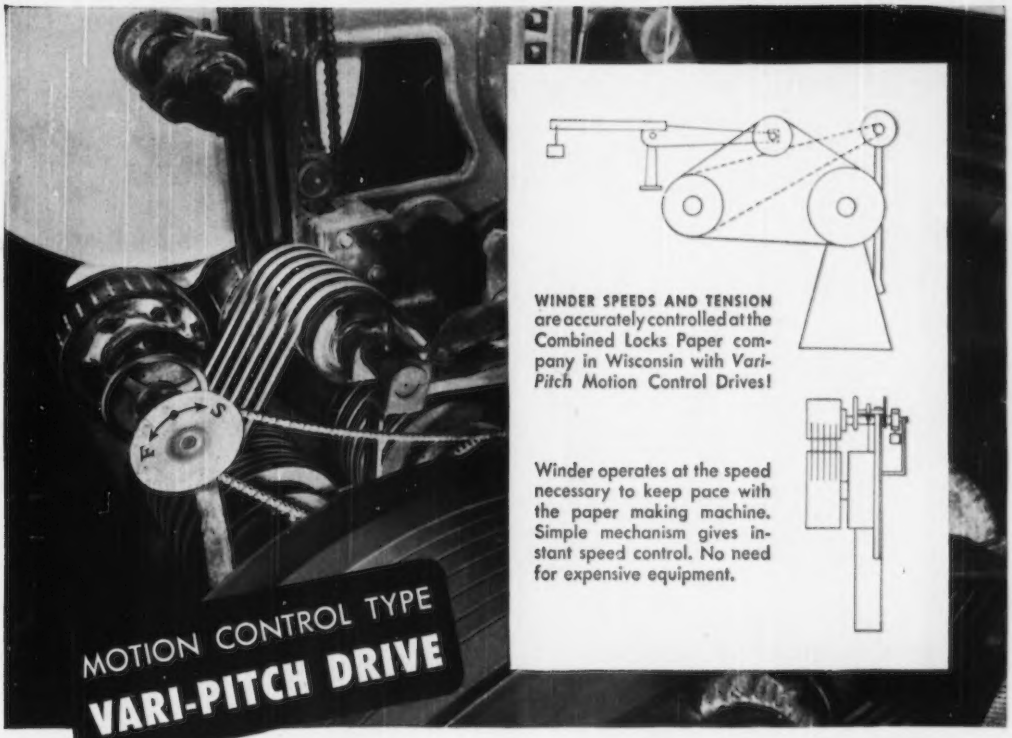
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15 West Forty-Seventh Street
New York 19, N. Y.
Phone: PLaza 7-2370

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All Other Countries $20.00 per year

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DATES TO REMEMBER

JANUARY 25-27: Canadian Pulp & Paper Assn., Technical Section, Mount Royal Hotel, Montreal.

JANUARY 26: American Pulp & Paper Mill Superintendents Assn., Miami Valley Div., Hotel Anthony Wayne, Hamilton, Ohio.

FEBRUARY 5: National Association of Waste Material Dealers, Inc., Mid-Western Div., Stevens Hotel, Chicago, Ill.

FEBRUARY 13-15: American Management Assn., Personnel Div., Palmer House, Chicago, Ill.

FEBRUARY, 19-25: A.P.P.A., Waldorf-Astoria, New York City.

FEBRUARY 20-22: National Council for Stream Improvement, Waldorf-Astoria, New York City.

FEBRUARY 20-24: Technical Assn. of the Pulp & Paper Industry, Hotel Commodore, New York City.

FEBRUARY 21: Massachusetts Institute of Technology Alumni, Engineer's Club, 32 West 40th St., N. Y. C.

FEBRUARY 21: SAPI, Hotel Waldorf-Astoria, New York City.

FEBRUARY 22: N.Y.S. College of Forestry Alumni, Roosevelt Hotel, New York City.

FEBRUARY 22: University of Maine, Hotel Commodore, New York City.

FEBRUARY 23: A.P.P.A. Dinner, Annual Meeting, Waldorf-Astoria, New York City.

FEBRUARY 26-MARCH 1: American Institute of Chemical Engineers, Regional Meeting, Rice Hotel, Houston, Texas.

FEBRUARY 27-MARCH 3: American Society for Testing Materials, Committee Week & Spring Meeting, Hotel William Penn, Pittsburgh, Pa.

MARCH 13-15: National Assn. of Waste Material Dealers, Inc., Waldorf-Astoria, New York City.

MARCH 15-17: American Management Assn., Marketing Div., Hotel Statler, New York City.

MARCH 22-23: Folding Paper Box Association of America, 1950 Carton Competition, Annual Meeting, Drake Hotel, Chicago, Ill.

MARCH 27-29: National Paper Trade Assn., Hotel Waldorf-Astoria, New York City.

JUNE 8-10: American Pulp & Paper Mill Superintendents Assn., Edgewater Beach Hotel, Chicago, Ill.

Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1950 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1899, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER, established Sept. 21 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in Industrial Arts Index and Engineering Index. Also publisher of LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 18, 1950.

Paper Production Zooms

In the year's first week, paper production zoomed from holiday cutbacks to 95.8 percent of capacity, unbleached kraft paper to 93.1 percent.

The comparatively low springback of paperboard to 74.0 percent in the same week denotes the post-Christmas easing in set-up boxboard shipments. During the week ended January 7, it is notable that new orders for paperboard climbed to 210,930 tons for a gain of 63,886 tons over the earlier week, and 57,525 tons over the week ended December 24, 1949.

Market Outlook

Book.—A new spurt in book and printing paper demand is seen as likely in the near future to implement another wave of advertising angled at veterans' insurance refunds. That market is vigorously competitive with premium grades of machine coated enamels reportedly gaining territory once held by conversion-coated glossy's.

Kraft Wrapping.—Shipments of kraft wrapping paper are said to be two or three months behind schedule, while merchant inventories have fallen to 30-day levels. In the grocery bag field, some of the distributor independence which characterizes a seller's market has reappeared, somewhat ill-timed in view of increasing imports.

Price of kraft wrapping paper is unchanged from September 1 levels, despite the many rumors of new rises throughout December. Scandinavian importations are being closely watched for their effect on the price structure of this market.

Bonds and Ledgers.—Demand for business papers continues at a steady pace with some small inventory building noted. Despite forecasts of professional market services, there is no logical reason for expecting lower prices of sulfite or rag content bonds or ledgers in the early future. Demand continues strong in the face of good general business conditions; wood pulp, cottons and chemicals are strong pricewise; fuel and labor costs are higher.

Tissues.—Some slackening in wrapping tissues appeared with the passing of the holiday season, and the drop in department store sales which, as reported by Federal Reserve Board for the week ended January 7, were 25 percent below 1949's first week. Weekly index (1935-39=100) of 205 for January 7 compares with 272 for 1949, and with 197 for the week ended December 31, 1949.

Weather Effects Seasonal Buying

Consumer buying showed a decline during the second week of January in this area, Chemical Bank & Trust Company's *Trends* reports, aided by unseasonal weather. Winter wear was neglected despite promotions, and travel and cruise items were in but scattered demand. However, stores are stocking up for lively trade ahead in the $2,800 million going to war veterans in insurance refunds.

Retail dollar volume for durables decreased slightly during the week ended January 13. Low-priced articles were preferred, D&B report states; and small items such as silverware and leather were in large demand. Large unit volume of "white sales" was sold. Major appliances remained popular, though the wide use of discounts diminished dollar volume.

Confidence in spring buying was seen in wholesale volume gains. Trade volume in textiles gained slightly. Demand for rayon cloth, increasing periodically, was at a high level.

Industrial Production Rises

Total industrial production during the week ended Wednesday, January 11, rose fractionally, it is noted. Steel ingot production increased by 1 percent to 97 percent of capacity. Automobile output rose 5 percent in the week ended January 7, production being nearly 13 percent above the level of 1949's week.

Wood Pulp Market Strong

Because of the continued heavy demand for all types of wood pulp, the market is reported as firm and gathering strength. Bleached kraft is in strongest position with several importers registering concern over short Swedish supply. Bleached sulfite appears adequate to current demand. Small tonnages of Austrian bleached sulfites are in the New York market at $107/110 on dock, quality rated as a good third.

Unbleached krafts have been moved to a strong position pricewise by integrated-mill use of their production, also by the continued heavy demand from non-integrated mills for market unbleached krafts. Northern krafts are able to command their prices at quoted contract levels and to be short in supply. Rumors of spot offerings above going levels are unconfirmed; but less is heard of large tonnages below first quarter quotations.

A somewhat different status exists in unbleached sulfites, where some softness in supply is reported in Scandinavian secondary and lower grades, as well as in domestic grades. In some quarters, it is held as likely that the appearance of Puget Sound's new sulfite grade in the Spring will be followed by improved Canadian grades—good news, if true, to U.S. consumers who are anxious to assure themselves of a more satisfactory domestic supply of quality grades.

The Swedish Supply

Speculation abounds concerning the Swedish supply of wood pulps. The consensus of industry opinion is that barring one or two spots of temporary tight supply on bleached krafts, there should be adequate tonnages of bleacheds for U.S. consumers to first open water.

It is learned that the British have bought only insignificant amounts of bleached or bleachable sulfites for the first quarter, its being their intent to reduce State-owned stocks in Great Britain before controls are abolished on March 31. Prices to the U.K. are understood to include an approximate $15 per ton rise over fourth quarter prices, making the price for bleached sulfite, c.i.f. Britain equal to approximately $101 on dock our ports.

From the Swedish Wood Pulp Journal it is learned that negotiations between sellers' and buyers' organizations for log prices have been settled with a reduction in pulpwood prices which ranges by region from 13 to 20 percent, while adjustments on sawlogs are small. The consequence probably will be, the writer states, that forest owners will hold back cutting and selling of pulpwood during the coming season.

It is erroneous to conclude from this, reliable sources here point out, that lower prices of wood pulp are in the making, or that an inadequate supply of wood pulp will result. The price of pulpwood does not make the selling price of pulp. The world market price, which is conditioned by supply and demand, determines the Swedish and other Scandinavian prices, as it does the domestic. Furthermore, it is indicated that there is an abundant supply of pulpwood already cut in Sweden. In view of Sweden's new export offensive aimed at dollar earnings, alone, it is likely that a supply of woodpulp will be available for the U.S. market. That the market undertone will gather strength by reason of tighter supply is most likely should demand continue at its present rate.

Production Indexes

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 93.1 percent for the week ended January 7, compared with 55.2 for the preceding week, and with 88.4 percent for the corresponding week of 1949.

Comparative ratios of U. S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Jan. 7 1950	Dec. 31 1949	Jan. 8 1949	Jan. 10 1948	Jan. 11 1947
Paper	95.8	172.4	95.3	99.4	102.6
Paperboard	74.0	53.0	79.0	99.0	102.0

‡ Revised.

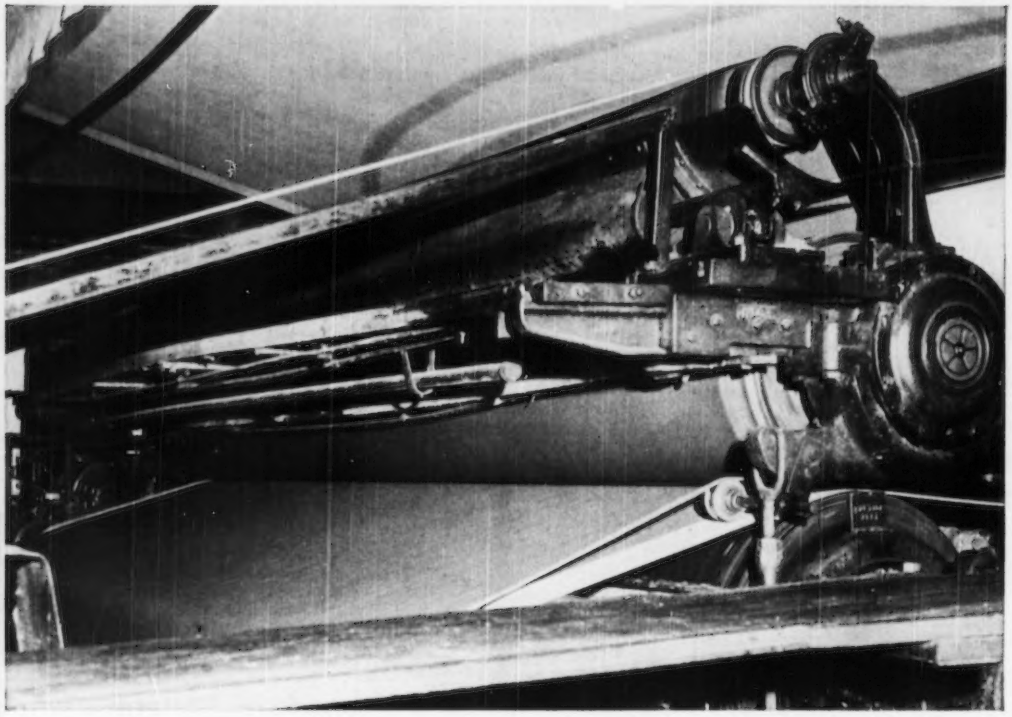
Paperboard Production (Tons)*

	Jan. 7 1950	Dec. 31 1949	Jan. 8 1949
Production	170,283	111,463	158,780
New Orders	210,930	147,044	204,405
Unfilled Orders	399,643	359,273	361,252

* Source: NPA.

General Business Indexes

Index of general business activity for the week ended January 5 jumped to 150 from 144.7 in the preceding week, compared with 149.5 in the corresponding week of 1949.



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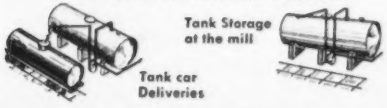

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MORE AND MORE mills are turning to peroxide bleached groundwood as the answer to the demand for low priced papers which must have brightness, bulk, opacity, absorbency and good printing properties. It is particularly useful for printing papers where high strength and long life are not essential. Substantial savings in manufacturing costs can be made because you start with a low cost fiber. Through peroxide bleaching it is possible to get improved opacity in a lighter weight sheet. For the production of many kinds of paper there may be a saving of 10% to 20% in fiber cost.

Peroxide bleached groundwood is now a regular item in a substantial number of integrated and non-integrated mills. Groundwood bleaching can be easily and economically installed in practically any mill.

Peroxide bleaching is not limited to groundwood. It can be adapted to soda, sulfite, semi-chemical pulps and for waste paper recovery.

Technical service and assistance in peroxide bleaching is available from the men who pioneered the development of groundwood bleaching. For more information about Du Pont peroxides and Du Pont bleaching processes, just fill in and mail the coupon below.

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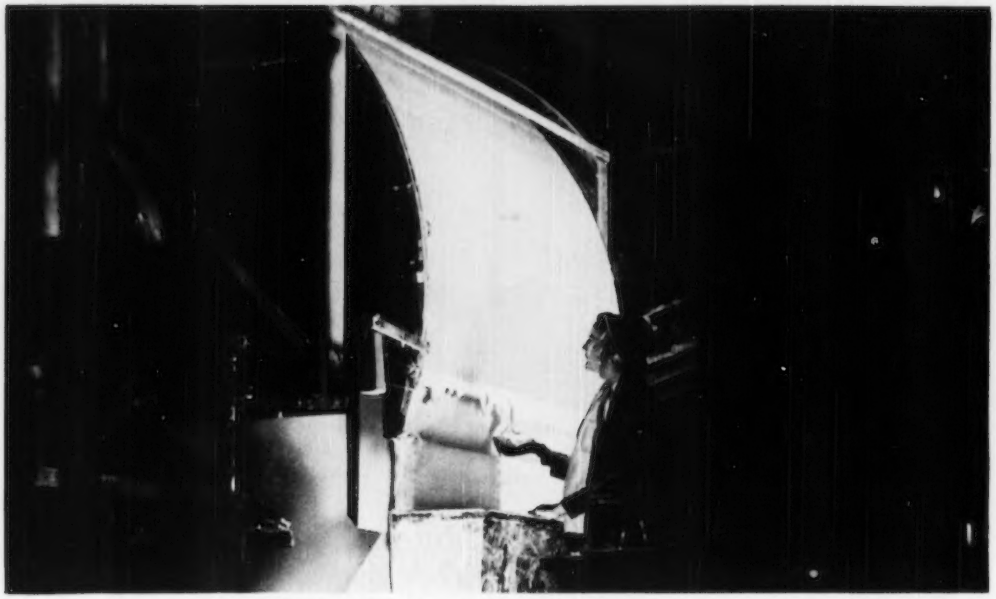

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Paper TRADE JOURNAL

News of the Week

Park & Sons Gets Lewiston Contract

LEWISTON, Idaho.—A contract for construction of a pulp and paper mill in Lewiston for Potlach Forests, Inc., has been awarded to W. J. Park & Sons, Larson Building, Yakima, PFI President William P. Davis reports.

The company declined to reveal building costs, but Davis said the plant would be in the multi-million dollar class. Work is expected to start January 15 and the completion date has been set for January 1, 1951.

W. J. Park & Sons constructed the pulp and paper mill at Springfield for the Weyerhaeuser Timber Co., and did similar installations for the Weyerhaeuser firm at Longview and Everett, Wash.

Mark R. Kulp, Idaho reclamation engineer, said permission will be granted to Potlatch Forests to take 100 cubic feet of water per second from the Clearwater river at Lewiston for the mill. The plant will be erected opposite the tail race from the PFI mill in East Lewiston and adjacent to the company's veneer plant.

The sulphate method will be used in the manufacture of pulp. The mill is designed to use all of the wood waste from the parent sawmill and veneer plant as well as pulp-type trees from north central Idaho forests.

May Suspend Operations

ESPANOLA, Ont.—This of approximately 4,000 people is sometimes referred to as a resurrected ghost town. It was considered a ghost town from 1930, when the Abitibi Power & Paper Co. went into liquidation with the consequent closing of its mill here, until 1943, when the mill was put back into operation by the Kalamazoo Vegetable Parchment Pulp and Paper Co., Ltd. Now there seems to be every likelihood that the ghost will again arise.

The Judicial Committee of the Privy Council on January 12 rejected K.V.P.'s petition for special leave to appeal against injunctions obtained by property owners along the Spanish River below the mill, who have alleged pollution of the stream.

These property owners are fishermen, farmers and tourist-camp operators. They were successful in obtaining injunctions against the company restraining it from draining waste materials into the stream on which the mill is located. The company has now exhausted all legal means of getting the injunctions lifted. This recent decision of the privy council upholds a decision of the Supreme Court of Canada that K.V.P. should not be allowed to appeal.

Ralph Hayward, K.V.P. president, said in Kalamazoo on receipt of word of the final legal decision, that it may mean suspension of the company's Espanola operations "before next April."

"We have done everything we can," Mr. Hayward said. "We now have exhausted all legal remedies in the courts to be relieved of this njunction" and added that the company had spent over

R. A. HAYWARD

$250,000 on mill improvements to cure the pollution of the stream.

B. F. Avery, vice-president and general manager, had said, pending the privy council decision, that an unfavorable decision "will mean the community will have to go back on relief."

"Since the mill went into operation," Mr. Avery reported, "Espanola has boomed. Many buildings have been built, the school population has doubled and some 1,400 men have been given steady employment. If we can't get relief from the injunction, we'll have to close the mill April 4. We have spent nearly $250,000 trying to find a method of overcoming the so-called pollution, but without success. There is nothing more we can do. Science knows of no methods we haven't tried."

The injunction was handed down by Chief Justice McRuer last April after a group of tourist camp operators and others brought suit for $250,000 damages against the company for allegedly polluting the waters of the river. Damages of $5,600 were granted.

Crown Zellerbach Managerial Changes

SAN FRANCISCO—Management changes in Crown Zellerbach Corp.'s pulp and paper mills at Lebanon and West Linn, Ore., Port Angeles, Wash., and Carthage, N. Y., were announced by the president, J. D. Zellerbach, who is in the Pacific Northwest on a swing of all corporation plants prior to returning to Rome later this month to resume duties as Marshall Plan Administrator in Italy.

Following are the changes: P. T. Sinclair, resident manager at West Linn, has been promoted to staff assistant of manufacturing in San Francisco headquarters. He will be succeeded at West Linn by Malcolm Otis, resident manager at Port Angeles.

Resident Manager Ray Schadt of Carthage will come west to be resident manager at Port Angeles and will be succeeded at Carthage by G. H. Gallaway, currently resident manager at Lebanon, Ore.

Herbert Wymore, now on special assignment at Lebanon, will assume management duties at Lebanon under the title of acting resident manager.

Changes will be stepwise with Mr. Gallaway moving to Carthage first and the last move being Mr. Sinclair to San Francisco, so that several months will elapse before all changes are fully effective.

St. Joe Container Div. Starts

PORT ST. JOE, Fla.—The first order of kraft corrugated paper boxes is being turned out by the St. Joe Paper Co., in a recently-completed addition. The new structure comprises the company's container division.

No Connection With Eddy Match Co.

OTTAWA.—Archibald Welch, general manager of the E. B. Eddy Co., has made it clear that his firm has no connection with the Eddy Match Co., Ltd., whose head offices are in Pembroke, Ont., and which is alleged to be the operator of a monopoly in the manufacture, distribution and sale of wooden matches in Canada, according to a report of a probe conducted under the Combines Investigation Act by Commissioner F. A. McGregor. The report has just been made public by Justice Minister Garson.

KETCHIKAN PURCHASES PULPTIMBER AREA IN ALASKA

The blackened area in the above map shows the 1,500,000,000 cubic foot area of the Tongas National Forest, Alaska, which was taken by the Ketchikan Pulp & Paper Co. at a price of $30,000,000. The company is associated with the Puget Sound Pulp & Timber Co. of Bellingham, Wash. When in full production, they expect to produce about 500 tons of pulp daily. The mill plans to be in operation by late 1950 or early 1951. The dotted area in the map represents the National Forest; the heavy black line the pulptimber allotment boundary.

Hummel & Downing and Cornell Merge

MILWAUKEE, Wis.—Two organizations nationally known in the paperboard and box industries merged their identities on January 1 when Hummel & Downing Co. of Milwaukee became a division of Cornell Wood Products Co., with which Hummel & Downing has been affiliated as a wholly owned subsidiary since 1941. Announcement of the merger was made by W. Irving Osborne, Jr., president.

Hummel & Downing was established in Milwaukee in 1902 and was one of the first organizations to combine the manufacture of paperboard and boxes under one roof. During its existence of nearly 48 years the company pioneered many developments in paperboard and box manufacture and is recognized as one of the industry leaders in corrugated, solid fibre and cleated fibre shipping containers as well as in folding cartons and paperboard. It has the only paperboard mill in Milwaukee and is also Wisconsin's largest manufacturer in the combined shipping container and folding carton segment of the paperboard converting industry.

Cornell Wood Products Co., has operated paperboard and pulp mills at Cornell, Wis., on the Chippewa River, since 1914, manufacturing such specialty items as Cornell fibre wallboard, milk bottle cap board, match stem stock, solid and bleached lined manilas, solid wood pulp board, Cornell Claybrite, and folding boxboards.

As a result of the merger, Cornell will operate four paperboard machines, two at Cornell and two at Milwaukee. Shipping container and folding carton manufacture will continue in the Hummel & Downing Division plant at Milwaukee and corrugated boxes will also be made at the Division's plant in Arlington Heights, Ill.

No changes in ownership, personnel or policies are involved in the merger inasmuch as there has been a close affiliation of the two organizations during the eight years Hummel & Downing Co. has operated as a Cornell subsidiary.

Lockport Announces Employe Benefits

LOCKPORT, N. Y.—Despite increased production costs and higher prices for materials and an extensive remodeling program at its plant in Newfane, N. Y., the Lockport Felt Co. paid a Christmas bonus to its employes and has assumed employe costs of the New York State Disability Benefits Law and the Western New York Blue Cross Hospitalization Plan. Raymond J. Lee, executive vice-president, announced these employe benefits at the company's Christmas "get-together" dinner and meeting when the management was host to some 300 employes, their families and guests at the Newfane Memorial Hall.

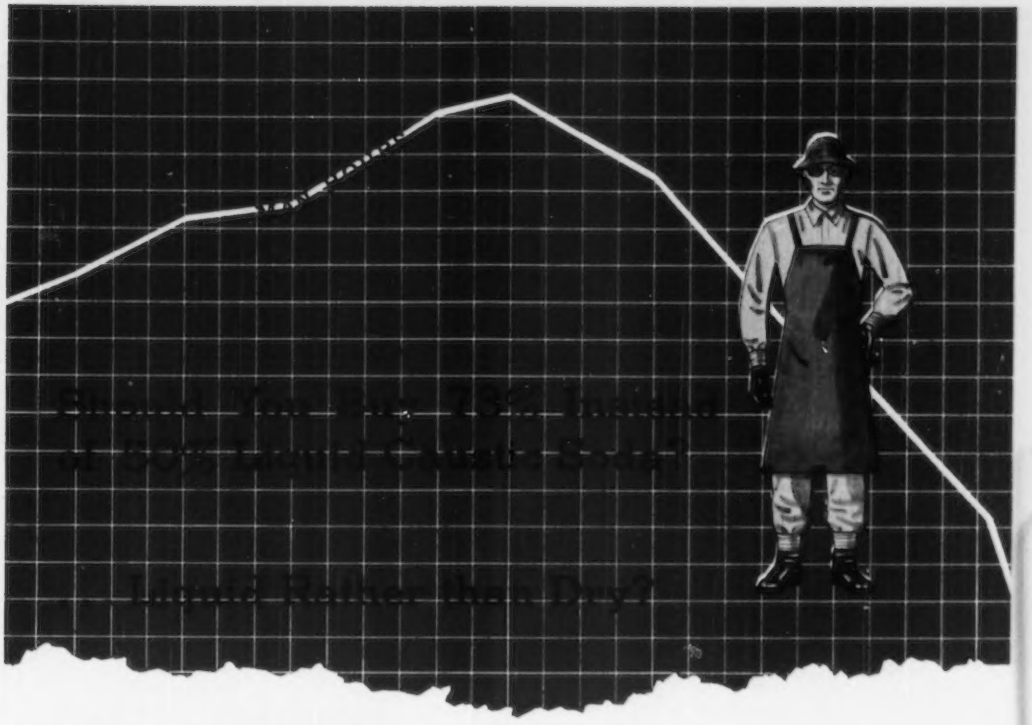
For the first time, the company presented service pins and some 140 employes received diamond-shaped pins for various terms of employment ranging from 5 to 45 years. The presentations were made by Mr. Lee and Lester D. Carner, secretary and personnel director, who was toastmaster. Two veteran employes, Arthur Schoelles and John Gray, received 45-year pins. Mr. Lee climaxed the presentation ceremonies when he handed a 40-year service pin to his father, former State Senator William H. Lee, president of the Lockport Felt Co., who will celebrate his 45th year with the company in March, 1950.

The executive vice-president, in announcing the employe menefits, reminded the employes that the Lockport Felt Company has had a company pension plan in effect for some 40 years and that recently an insured group annuity plan was installed. Cooperation and close relationships between management and employe have marked the company's entire history and Mr. Lee asserted that "because of this relationship and because of you and your suggested ideas, together with an outstanding sales job, we are concluding 1949 with a satisfactory profit in spite of a business slow-up, in spite of increased costs and in spite of the necessity of continuing our rebuilding and modernization program."

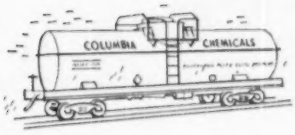
Thilmany Has 260 Accident Free Days

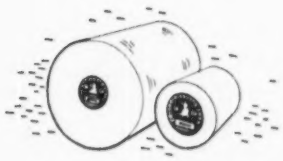
KAUKAUNA, Wis. — The paper industry is the second most important in Wisconsin employes of the Thilmany Pulp & Paper Co. were told January 8 by C. R. Seaborne, vice-president in charge of manufacture at Thilmany. He spoke at a party celebrating completion of 1,733,439 hours of work without lost time accident. 260 days without a lost time accident have elapsed, Seaborne asserted. When 2 million hours is reached, the mill will get national recognition. The bag factory has completed 956 days. The upper mill, 365 days; and the lower mill, 261.

The number of people employed at Thilmany in 1911 was 194 out of a population of 4,750 or 4.1 percent. In 1924 the mill employed 651 of the town's population of 6,200 or 10.6 percent. In 1949 there were 1,230 em-



COLUMBIA suggests—*a change may save you costly man hours*





A switch from 50% to 73% liquid caustic soda means 40% fewer cars to handle . . . the use of liquid rather than anhydrous caustic eliminates man hours required to unload, store, rehandle and dissolve. Today's competitive markets demand all possible manufacturing economies. That's why it may pay you to re-examine your methods and practices involving caustic soda.

The Columbia Caustic Soda Manual contains much data of value regarding the economics of the use of this chemical. Our Technical Service Department will be glad to supply any additional facts, without obligation, which you may need for analyzing your situation. Just write Pittsburgh Plate Glass Company, Columbia Chemical Division, Department CS-2, Fifth Avenue at Bellefield, Pittsburgh 13, Pennsylvania.

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PITTSBURGH PLATE GLASS COMPANY

ployed at the mill out of the town's population of 8,200 or 15 percent.

The 1934 payroll was $857,220; in 1949 it reached $3,882,027. The hidden payroll was $800,000. Seaborne explained that this figure was the cost to the company for safety and welfare, and the betterment of working conditions. The installation of safety devices, and the safety first program cost $65,000. "With life insurance values, bonds and saving accounts dropping, the way to protect our futures is just what we are doing; build up a community with a sound business basis that will appreciate in value as the value of the dollar drops," he said.

Nepco Signs Union Contract

PORT EDWARDS, Wis.—Hourly employes of Nekoosa-Edwards Paper Co. mills at Port Edwards and Nekoosa have been granted two paid holidays, the Fourth of July and Christmas Day, according to a statement made by John E. Alexander, president and general manager, in announcing completion of negotiations between the unions and Nekoosa-Edwards. The terms of the contract will be in effect through May 31, 1950.

To be eligible for holiday pay according to the terms of the contract, the employe must have been on the pay roll for 60 consecutive days prior to the holiday, he must work his regularly scheduled shift prior to and following the holiday unless prevented from doing so by reason of necessary absence as defined in the contract, and shall not have refused to work, having been requested to do so.

No changes were made in base pay rates or shift differentials. The base rate for male employes is $1.21 per hour, with six cents per hour differential for the second shift and eight cents for the third shift.

Three weeks vacation with pay for employes with fifteen or more years of service before June 1, 1950, was also announced by Mr. Alexander. Because the current contract covers the period through May 31, 1950, the three weeks vacation clause is not included but will be written into the 1950-'51 contract which, when signed, will provide the vacations.

Although most employes are now on a 40 hour week, 44 hours pay for vacation time will be allowed to employes with one to five years of continuous service and 88 hours of vacation pay for all employes with more than five years of continuous service.

Representing the unions in the negotiations were Elmer P. Meinz, International representative of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers; Daniel Edwards, president, and Robert Lee, vice-president of Nepco Local No. 52; Arvel W. Kinney, Grand Lodge representative of International Association of Machinists; Arthur L. Morgan, president, and Fred Weber, vice-president of Nepco Lodge No. 1543; Emil A. Noren, regional director of International Brotherhood of Paper Makers; Reno Plenge, president, and Alvin Bucholz, vice-president of Nepco Local No. 59.

Nekoosa-Edwards was represented by Alexander; C. H. Reese, vice-president in charge of manufacturing; S. A. Casey, secretary; W. R. Cahill, director of personnel administration; C. C. Parvin, general superintendent; N. E. Nash, vice-president; W. A. Radke, treasurer; N. H. Christian, Port Edwards mill operating superintendent; and R. A. Nugent, Nekoosa mill operating superintendent.

Oxford Strike Termed Unauthorized

RUMFORD, Me.—Contract negotiations were scheduled to begin January 11 between the management of the Oxford Paper Co. and the repair crew of the plant. The 280-man crew walked out January 6 in a dispute about seniority rights in layoffs. Joseph Kimko, field representative of the United Mine Workers of America, termed the work stoppage unauthorized. The men involved are members of UMW local 12745.

The paper concern, principal industry in the Oxford County area, employs about 2,800 persons. Company officials could not be reached for comment.

I. B. Relects Perrin

OREGON CITY, Ore.—William Perrin, West Linn, was elected to his third term as president of local 68, International Brotherhood of Pulp, Sulphite and Paper Mill Workers, according to unofficial returns of the balloting announced December 30 by Robert Archambeau, election chairman. Mr. Perrin, an employe of the Crown Willamette Paper Co. at West Linn, defeated Tom Swift of Publishers' Paper Co., Oregon City, for the presidency.

Other officers elected were: I. J. Lavier, vice president; Leo Helsby, recording and corresponding secretary; Carson Amrine, financial secretary; George Skaar, treasurer; Lawrence Burger, inside guard; Robert Giles, outside guard, and Howard Ross, trustee for three years.

Sweden Refines 80% of Liquid Rosin

WASHINGTON, D. C.—More than 80 per cent of liquid rosin recovered by Swedish sulphate pulp mills can now be refined within that country if required, a report to the Commerce Department points out, citing expansion in recent years of Swedish naval stores distilling capacity.

This expansion, it was stated, is "the most significant development in the Swedish naval stores industry" for the period noted. Solid rosin production reached its peak in Sweden in 1948, but production was less than 50 per cent of domestic consumption. However, due to exchange difficulties, a shift in imports of rosin has occurred, from United States sources to European.

C. W. P. Awards 25 For Suggestions

CAMAS, Wash.—Crown Willamette Paper Co., announced 25 awards of $5 each for suggestions contributing to plant efficiency.

Paul J. Bettasso, changes to carton conveyor to Schultz rewinders. William T. Collins, platform for converting plant warehouse transporter. Ronald Cory, portable steps for hi-density belts.

John G. Finel, put No. 9 elevator bell on the side of the elevator. Cora May Fitch, use wider sealing tape on 500 crepe packages. James A. Hansen, install water hose at No. 1 and 2 morden machines in sulphite testing stations.

R. W. Hirsekorn, move roll breakers back from 3 and 4 Lawtomatic wrappers. Delbert F. Knapp, cabinet for stock of Crown liner. Richard Lainhart, use carborundum M. X. stick to hone saws on box facial machine; put shim stock under saws on box facial machine to keep static from picking up napkins.

Carl Loron, cover water line over testing bench in kraft bleach plant with insulating material. Lester L. Miller, follow hand truck numbers with service numbers to indicate department. C. W. Mitten, extension on shaft release pedal to front of winder on No. 1 Cameron. V. Morgan, changes to automatic valves on oliver sludge filters so that they will be sealed with packing gland.

B. L. McBroom, install fluorescent lamp over No. 1 dampener. Leon C. Ochs, relay on motor on No. 21 elevator. C. G. Pluchos, install mirror at head of conveyor at storage floor in napkin department warehouse. Don Rodgers, install hangers in core department to hold air hoses. A. D. Timmons, additional air fitting back of No. 1 supercalender.

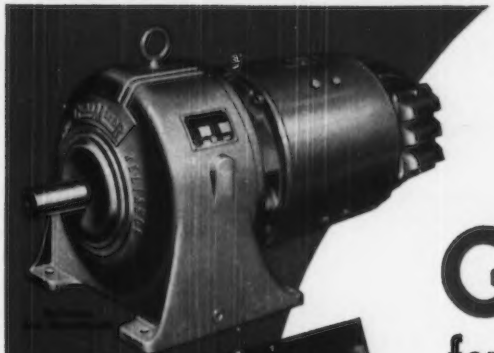
B. Tonder, improvements to carton guide on tissue conveyor, at sealer. Fred Watson, number bays in converting plant warehouse. Earl J. Whiting, tin covering on ends of plug roll crimpers on machine winders when new handles put on.

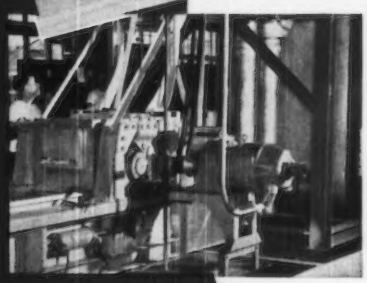
C. F. Wilkinson and Jesse Whitely, use car transmission instead of speed reducer. G. E. Wright, disconnect top hose on hydraulic cylinder on washer lifts to eliminate packing on top of cylinder.

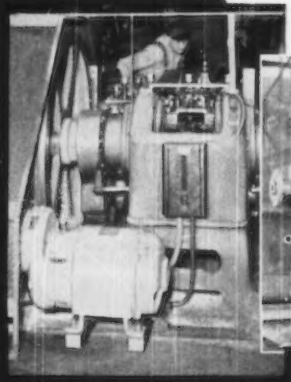
Canadian International Expands

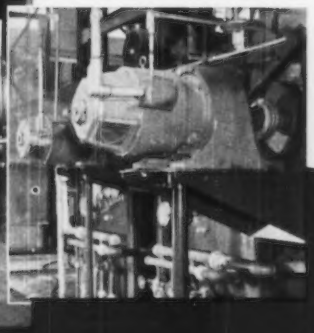
OTTAWA — Canadian International Paper Co., Montreal, subsidiary of International Paper Co., New York, recently began construction of a $1 million expansion at its bleached sulphite pulp and cellulose mill in Hawkesbury, Ont. The project consists mainly of new filter building, sedimentation basins, underground mixing tanks, reinforced concrete and brick. The engineers for the project are Surveyer, Nenniger & Chenevert, and the contractors E. G. M. Cape & Co.

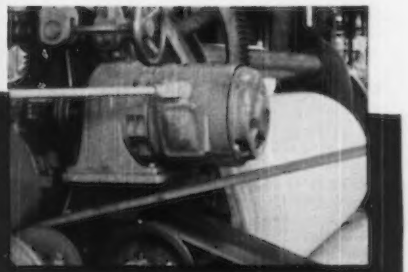
(Continued on page 31)











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Flambeau's Wood Operations Set Example

PARK FALLS, Wis. — In a recent survey conducted by the Lake States Forest Experimental Station, emphasis was placed on the fact that this area is fortunate in having an ample local supply of timber for its wood processing plants. Thus Park Falls area mills have no problem of having wood transported to them from points hundreds of miles away for conversion.

Benefiting from this flow of wood production is the Kansas City Star Co., Flambeau Paper Div., major wood-using industry in Park Falls. The most significant factor from the standpoint of local employment and a local supply of raw materials is found in the pulpwood yards of the paper mill. Here in 1948, during the four month period from December 1 to April 1, 500 different producers hauled in 56 percent of Flambeau's wood requirements. Most of this wood, 80 percent of which was spruce, balsam and hemlock, was harvested in a 30 mile radius of Park Falls, for which Flambeau paid out $500,000. The annual harvest is under way at the present time with 70 to 80 trucks turning into the pulpwood yards each day.

Tracing down the source of this wood brings out a number of highly interesting points. The most important is that without a master blueprint, the region is gradually adjusting itself to an economy dependent upon second growth forests. In fact, trees from surrounding forests have always been the mainstay for earning a livelihood in this area for the farmer in the winter season. But present day operations differ greatly from the time of large scale virgin timber logging days.

There are four major sources of supply. First of all, the paper mill has entered into a long term agreement with the Wisconsin Realty Co., which owns and manages under scientific forest practices, 55,000 acres in Ashland, Iron and Price counties. At the present time this agreement assures Flambeau about 5,000 cords in a normal year, while the tract is being developed to greater potentialities. General manager, Leonard Kuehl, refers to this agreement, which came about as a result of the change in mill ownership back in 1935, as comparable to the operation of an industrial forest.

The other and major sources of supply of wood come from selectively marked timber of the Chequamegon National Forest, county owned forest, from jobbers, and from farmer producers.

Cutting practices by jobbers and farmer producers in the Park Falls territory, as in most sections of the country, range from good to bad. Poor forest practices generally result where the economy of buying a "40" and logging it calls for clear-cutting. On the other hand an increasingly large number of farmers and other classifications of private land owners are harvesting crops of timber with an eye to light but more frequent cuts. The major problem this year according to Flambeau's chief forester, William Yost, is to limit 50 percent of the 1949 cut to blow-down timber. This is important to prevent overproduction of the local mill's needs.

Forester Yost also carries on an educational program to limit the harvesting of pulpwood to three stick trees. A pulpwood table, inserted with checks that go to producers, dramatizes the number of pieces required to make a cord from two inch top and from 12 inch top pulpwood. Citing a hypothetical case. Yost pointed out that on a piece work basis it would cost 80c to include 10 sticks of two inch top pulpwood in a cord. At the same time, these ten sticks in terms of volume would add only 1/35th of the cord. In comparison ten sticks of 8" wood increases volume to ⅓ of a cord and can be produced at practically the same cost.

Because one-third of the wood is hauled by full time truckers, a number of innovations have been developed. Jammers are mounted on trucks with a power take-off from the transmission to operate a winch. In the woods a cable extending from the winch is used in bundling the wood for loading on the truck. These jammers, worked out by a local garage, cost about $700 installed on a truck. Trucker's earnings are gauged by the number of trips they can make each day, and are paid $2.75 to $4.50 per cord for hauling. Some of the semi-trucks can carry up to 6½ cords of pulpwood.

When a truck arrives at the yard, it can be scaled and unloaded by the dump cart method in a matter of 5 to 7 minutes if a trucker does not have to wait for unloading space. 16 men are employed in the yards on cranes as scalers and part-time workers in the switching crew.

There are 300 employes in the mill who convert the locally grown pulpwood into high grade writing bond paper, envelope stock, mimeograph paper, ledger and book papers. For a few years during the war, newsprint was produced for the Kansas City Star. Because of the high cost of manufacturing newsprint in Wisconsin as compared with Canada, no newsprint has been produced by the mill since the first of last year.

Officials of the Kansas City Star Co., Flambeau Paper Div., estimate that a total of 1500 people including mill employees, woods operators, and truckers have a hand in marketing their end product, paper, 77 percent of which is manufactured from Wisconsin timber. This ratio is a direct opposite from many mills who reach out to such far-away places as Colorado, Montana and Canada for their wood.

What this would mean to Wisconsin in terms of winter employment and a cash income, if the 36 mills in this state could draw upon their own forests for raw material, is hard to estimate. Add other wood-using industries to the picture and it would not be difficult to come up with a new 25 million dollar a year forest industry.

FORESTRY

Bradley Celebrates Forestry Day

BRADLEY, Ark.—Forestry day sponsored by Bradley high school agriculture department in cooperation with the International Paper Co. of Cullen, La., and the U. S. Soil Conservation service was held on the J. G. Allen, Jr., farm three miles west of Bradley on January 4.

A mechanical three planter loaned to the International Paper Co. was in operation from 9 a.m. until 4 p.m.

Within the following two weeks several hundred thousand pine seedlings will be planted on individual farms in this vicinity and the Bradley agriculture department has secured a 30 acre tract, which, in cooperation with the U. S. Soil Conservation service, will be maintained for observation of citizens of the community. The management of which will be performed by the FFA boys over a period of years.

Tree Farm Acreage Passes 20 Million For 27 States

WASHINGTON, D. C.—At year's end the United States had a record high of 20,010,102 acres of privately owned timberland dedicated to the perpetual production of wood for commercial use.

This acreage, representing 2242 different ownerships in 27 states, is certified in the American Tree Farm System. During 1949 almost three million acres were added to the program according to James McClellan, chief forester for American Forest Products Industries of Washington, D. C., national record-keeper for the industry-encouraged tree growing program.

The increase in tree farm acreage during 1949 was the largest since 1942, McClellan said. Michigan, with 628,751 acres, led the nation in new tree farm acreage. It was followed in order by Florida with 419,836, Oregon with 387,471, North Carolina with 308,922 and Washington with 257,226.

For the fifth consecutive year the South led all other regions in tree farm growth with a total of 1,151,758 acres. The Western pine area showed the second largest growth and the Lake State region was third.

The American Tree Farm System, which started in the State of Washington in 1941, spread to four new states — Rhode Island, Michigan, Missouri and North Dakota during 1949. In summing up advancements in the Tree Farm program, Chief Forester McClellan predicted that 1950 will also be a banner year for forest protection and tree growing.

Since the program began in 1941, sponsors in nine states have cancelled the certificates of 82 owners whose holdings totaled 233,306 acres because of change of ownership or for failure to maintain the standards of protection and forest management required.

Minnesota will dedicate its first tree farms in the spring of 1950. Louisiana and New Hampshire are also expected to launch tree farm programs sometime during the year.

The present national status of tree farms, according to figures compiled by J. C. McClellan, Forester for the American Forest Products Industries, Inc., is:

State	*No. of Tree Farms*	*Acreage*
Alabama	325	2,252,903
Arkansas	251	3,009,843
Mississippi	226	738,792
North Carolina	57	587,374
Texas	205	2,741,599
Tennessee	231	290,193
Florida	62	1,604,347
Virginia	30	186,764
Georgia	26	335,833
South Carolina	44	232,009
Subtotal — South	1,457	11,979,657
Idaho	61	442,700
Western Washington	62	2,103,278
Eastern Washington	53	438,272
Western Oregon	38	1,167,414
Eastern Oregon	13	906,507
New Mexico	1	80,000
California	94	647,255
Montana	46	849,252
Subtotal — West	368	6,634,678
Michigan	169	628,751
Wisconsin	7	479,834
Subtotal — Lake States	176	1,108,585
Missouri	4	91,280
Ohio	102	9,250
Subtotal — Central States	106	100,530
North Dakota	17	1,536
Subtotal — Plains States	17	1,536
Rhode Island	6	481
Pennsylvania	63	69,244
Maryland	1	1,267
Massachusetts	10	6,627
New Jersey	12	9,720
West Virginia	26	97,777
Subtotal — Eastern States	118	185,116
Total — United States	2,242	20,010,102

Brunswick Aid Reforestation

DOUGLAS, Ga.—Three Coffee county vocational agriculture departments are replacing once-barren hillsides and clearings with a flourishing crop of new timber.

The vocational departments at Nicholls, Satilla and Broxton are being aided in the reforestation programs by the Brunswick Pulp and Paper Co. of nearby Brunswick, which is donating thousands of pine seedlings for the project.

R. G. Douglas, representing the company, obtained the seedlings and is working with the Future Farmers of America in each department.

The reforestation program is being stressed in sections of south Georgia where increased working of naval stores and cutting of pulpwood is depleting the timber supply.

Sam Roberts, vocational agriculture teacher at Broxton, points to the "intensification of farming in Coffee and other south Georgia counties," and efforts of agricultural workers to provide a constant supply of marketable forest products.

The FFA members in the three schools are setting out the pine seedlings.

The reforestation program is greatly aided by donations such as the Brunswick company made and shows promise of growing by leaps and bounds.

Duplessis Addresses Forestry Assn.

OTTAWA—Premier Maurice Duplessis of Quebec was the guest speaker at the inaugural meeting of the Forestry Ass'n. of Laurentides, headed by J. W. Sutherland, which was held at de Salaberry Armories, Aylmer Road, on January 17.

Ask Forest Fire Prevention Programs

OTTAWA.—A brief has been presented to the federal cabinet by a delegation from the Canadian Chambers of Commerce urging the Canadian Government to extend educational programs to emphasize the part the public can play in saving their forests from destruction by fire.

American Paper and Pulp Association

Preliminary Program—73rd Annual Convention
Waldorf-Astoria Hotel, New York, February 19-24, 1950

E. W. TINKER
Secretary

SATURDAY, 18

The Institute of Paper Chemistry

11:00 a.m.—Board of Trustees, Canadian Club

SUNDAY, 19

The Tissue Assn., Inc.

R. A. Fife, 122 E. 42nd St., NYC, MU 3-8763

2:00 p.m.—Finance and Rate Policy Committee Meeting, R. A. Fife Suite

5:00 p.m.—Board of Directors Meeting, Board of Directors Dinner, Barclay Hotel, Hamilton Room

United States Pulp Producers Assn.

J. L. Ritchie, 122 E. 42nd St., NYC, Lex. 2-4500

1:00 p.m.—Executive Board Luncheon and Meeting, Pillement G-H

Writing Paper Manufacturers Assn.

M. C. Dobrow, 122 E. 42nd St., NYC, Lex. 2-4430

12:30 p.m.—Luncheon followed by Meeting of Rag Content Executive Committee, 4 J K L

MONDAY, 20

American Paper and Pulp Assn.

E. G. Amos, 122 East 42nd St., NYC, Lex. 2-4500

10:00 a.m.—Biological Control Committee, 4 N

10:00 a.m.—Committee on Coordination of Research, 4 J

2:00 p.m.—Committee on Classification and Definitions, 4 F

2:30 p.m.—Conservation of Materials, 4 J

American Pulpwood Assn.

H. E. Brinkerhoff, 220 E. 42nd St., MU 2-4371

9:30 a.m.—Technical Committee, 4 M

Coated and Processed Paper Assn.

10:00 a.m.—Annual Meeting followed by Luncheon, Club Suite, Hotel Commodore

Groundwood Paper Manufacturers Assn.

R. E. Canfield, 122 E. 42nd St., NYC, Ash 4-3755

10:00 a.m.—Annual Meeting, Carpenter Salon

1:00 p.m.—Luncheon, Carpenter White

2:30 p.m.—Annual Meeting (continued), Carpenter Salon

National Council for Stream Improvement

R. S. Winget, 271 Madison Ave., NYC

10:00 a.m.—Research Review and Open Panel, West Foyer Discussion. All day meeting with recess for Luncheon

Salesmen's Assn. of the Paper Industry

E. G. Amos, 122 E. 42nd St., NYC, Lex 2-4500

2:00 p.m.—Executive Committee Meeting, 4 M

4:00 p.m.—Annual Meeting, 4 M

Soda Pulp Manufacturers Assn.

R. I. Worrell, 230 Park Ave., NYC

3:00 p.m.—Annual Meeting, 4 F

Sulphite Paper Manufacturers Assn., Inc.

T. J. Burke, 122 E. 42nd St., NYC, Lex 2-4508

10:00 a.m.—Board of Governors, Crane 4-V

12:15 p.m.—Sulphite Association Reception, Jansen Suite

1:00 p.m.—Annual Luncheon, Jansen Suite

2:30 p.m.—Sulphite Association Annual Meeting, Jansen Suite

The Tissue Assn., Inc.

9:30 a.m.—Toilet Paper Product Group Meeting, Basildon Room

11:15 a.m.—Paper Towel Product Group Meeting, Basildon Room

2:30 p.m.—Facial Tissue Product Group Meeting, 4 N P

United States Pulp Producers Assn.

10:00 a.m.—Annual Meeting, Jansen Suite

12:30 p.m.—Annual Luncheon, W-X

Writing Paper Manufacturers Assn.

10:00 a.m.—Executive Committee, G-H

1:00 p.m.—Bristol Board Group-Luncheon and Meeting, Crane U-V

TUESDAY, 21

American Paper and Pulp Assn.

10:00 a.m.—Committee on Instrumentation Research, 4-V

2:00 p.m.—Statistical Committee, 4-F

2:30 p.m.—Pulp and Paper Industry Council, G-H

American Pulpwood Assn.

9:30 a.m.—Open Meeting, West Foyer

2:00 p.m.—Open Meeting (continued) West Foyer

7:00 p.m.—Annual Dinner, Basildon Room

Assn. of Pulp Consumers, Inc.

3:00 p.m.—Directors' Meeting, Crane U

National Council for Stream Improvement

10:00 a.m.—Joint Meeting Regional Chairmen and Technical Planning and Budget Committee, W

The Paper Napkin Assn., Inc.

9:30 a.m.—Annual Meeting followed by Luncheon, Hamilton Room, Barclay Hotel

Salesmen's Assn. of the Paper Industry

12:30 p.m.—Annual Luncheon, Grand Ballroom

Sulphite Paper Manufacturers Assn., Inc.

dyestuffs for paper

specially standardized for paper

plus

General's technical field service

and

***quick color matching service**

To insure prompt deliveries stocks of dyestuffs are carried in warehouses strategically located throughout the country.

*Color matches are mailed the same day as received . . . formulas sent by wire or telephone at your request.

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9:30 a.m.—Unbleached and Treated Butchers Group, 4 N P
11:00 a.m.—Manila Group, 4 N P
2:00 p.m.—Machine Glazed Wrapping Group, 4 P
3:00 p.m.—Bleached Converting Group, 4 P
4:00 p.m.—Bleached Waxing Group, 4 P

The Tissue Assn., Inc.

9:30 a.m.—Wrapping Tissue Product Group Meeting, 4 M
11:15 a.m.—Jumbo Roll Product Group Meeting, 4 M
1:15 p.m.—Number 2 Wrapping Tissue Product Group Luncheon and Meeting, Y
3:00 p.m.—Gift Wrapping Product Group Meeting, 4 M
5:00 p.m.—Overall Nominating Committee Meeting, 4 J

Waxed Paper Institute, Inc.

A. H. Noelke, 380 S. Dearborn St., Chicago, Ill.
9:30 a.m.—Executive Committee, Carpenter Suite
12:30 p.m.—Luncheon, Carpenter Suite
2:00 p.m.—Executive Committee (continued), Carpenter Suite

Writing Paper Manufacturers Assn.

9:30 a.m.—89th Annual Meeting, Jade Room

WEDNESDAY, 22

American Paper and Pulp Assn.

9:30 a.m.—Materials Committee — Open Meeting, 4 M
10:00 a.m.—Public Affairs Committee, Y
10:00 a.m.—Technical Committee, 4 V
2:00 p.m.—Forestry Committee, X
2:30 p.m.—Export Committee — Open Meeting, 4 M
6:30 p.m.—Past Presidents Dinner, Jansen Suite

American Pulpwood Assn.

9:30 a.m.—Members Meeting, X
2:00 p.m.—Board of Directors Meeting, Y

Assn. of Pulp Consumers, Inc.

10:00 a.m.—Annual Meeting, Jade Room
12:15 p.m.—Reception, Jade Room
12:45 p.m.—Annual Luncheon, Astor Gallery

Glassine and Greaseproof Manufacturers Assn.

T. J. Burke, 122 E. 42nd St., NYC, Lex 2-4508
8:30 a.m.—Executive Committee & Breakfast Meeting, G-H
10:00 a.m.—Association Annual Meeting, G-H
12:30 p.m.—Luncheon — next door to G-H

Kraft Paper Assn., Inc.

Dernell Every, 3406 Chanin Bldg., NYC, Lex 2-0634
10:00 a.m.—General Industry Meeting followed by Luncheon, Jansen Suite

Newsprint Service Bureau, Inc.

J. J. Zima, 342 Madison Ave., NYC
9:00 a.m.—Annual Meeting, Crane U

National Council for Stream Improvement

R. S. Winget, 271 Madison Ave., NYC
10:00 a.m.—Board of Governors Meeting, Carpenter White
2:00 p.m.—Annual Meeting of Members, Basildon Room

Specialty Paper and Board Affiliates

G. D. Cook
10:00 a.m.—Executive Committee, 4 N-P
2:00 p.m.—Photomount Group, 4 F

The Tissue Assn., Inc.

10:00 a.m.—General Industry Meeting, Basildon Room
3:00 p.m.—New Board of Directors Meeting, G-H

Waxed Paper Institute, Inc.

9:30 a.m.—Annual Meeting, Wedgwood Room
12:30 p.m.—Luncheon, Wedgwood Room
2:00 p.m.—Annual Meeting (continued), Wedgwood Room

Writing Paper Manufacturers Assn.

M. C. Dobrow, 122 E. 42nd St., NYC, Lex 2-4430
10:00 a.m.—Cover and Text Paper Group, Carpenter Salon

THURSDAY, 23

American Paper and Pulp Assn.

9:30 a.m.—Traffic Committee, W
10:00 a.m.—Executive Committee and Board of Gov., Jansen Suite
12:30 p.m.—Traffic Committee Luncheon, X
2:00 p.m.—General Industry Meeting, Starlight Roof
7:15 p.m.—Annual Dinner, Grand Ballroom

Writing Paper Manufacturers Assn.

M. C. Dobrow, 122 E. 42nd St., NYC, Lex 2-4430
11:00 a.m.—Thin Paper Group, Carpenter Salon
1:00 p.m.—Luncheon, Carpenter White

H. Parkes to Address SAPI

NEW YORK—Holcombe Parkes, vice-president in charge of public relations for the National Assn. of Manufacturers has accepted the invitation to be speaker at the Annual Luncheon of the Salesmen's Assn. of the Paper Industry on February 21.

Mr. Parkes has been with N.A.M. for the past five years, but will join the Apex Film Corp. of Los Angeles as executive vice-president on February 2. He will maintain offices in New York as well as Los Angeles and will be primarily responsible for the promotion, writing and production of industrial and public relations films. He is a native of Illinois and a graduate of Illinois University. He has spent his life in publicity and public relations work, mostly with the railroad industry.

Mr. Parkes was chosen for this assignment after a diligent search for someone who could bring to the industry some concrete thoughts in connection with public relations.

Public Relations Committee Formed

NEW YORK — Chairmen of Cotton Rag Council sub-committees of the National Association of Waste Material Dealers, Inc., have been named to the public relations committee, according to an announcement made by Anthony Nicoletti, D. Benedetto, Inc., New York City, president of the council.

Those named to the committee follow: James Derrico, The Derrico Co., New York City, Packers and Brokers; Carlton B. Overton, Castle & Overton, New York City, Importers; Joseph Schapiro, S. Schapiro & Sons, Inc., Baltimore, Md., New Cuttings; Arthur Rosenfeld, William Steck & Co., New York City, Rope, String, and Bagging, and Joseph Maggese, Rag Processing Co., Long Island City, N. Y.

The group has charted an eight-point program, which provides for the following activities: (1) continuous new specifications and clarifications; (2) a grievance committee; (3) the fine record within the industry; (4) legitimacy of enterprise; (5) good packing; (6) good quality means good end-products, and (7) campaign against abuses.

Superintendents and TAPPI Meet

KALAMAZOO, Mich.—"The most important application of the knowledge of atomic power lies in its power to make existence more blessed by giving us a glimpse of the nature of malignancy and thus a tool to combat it," Dr. J. T. Wilson, physicist, told guests at the annual joint meeting of the Michigan Div. of the American Pulp and Paper Mill Superintendents Assn. and the Kalamazoo Valley Section of TAPPI, January 12. Dr. Wilson is chief physicist for the Allis-Chalmers Co.

Dr. Wilson, speaking to 425 members and guests at the 15th annual joint meeting, said that in his opinion the industrial application of atomic power is secondary to its value to the biological chemist in the fight against malignant diseases.

"In atomic energy," Dr. Wilson said, "the breaking of heavy nuclei is accomplished by the liberation of energy which is, in its fundamental nature, heat energy. All engineering practice involving the use of heat sources applies to the handling of atomic power." He said men will be in the best position to deal with atomic power

(Continued on page 24)

Tentative Program For Annual Meeting

Technical Association of the Pulp and Paper Industry

Commodore Hotel, New York, N. Y., February 20-23, 1950

R. G. MacDONALD
Secretary

MONDAY, 20

10:00 A.M. General Session

1. Secretary's Report.
2. President's Address.
3. Tellers' Report.
4. Joint Textbook Committee Report, by R. S. Kellogg.
5. "Radioisotopes in the Pulp and Paper Industry," by A. P. Schreiber, Tracerlab, Inc.

2:00 P.M. Committee Meetings

All committees of the Association will hold separate meetings to discuss committee projects and future plans.

TUESDAY, 21

9:15 A.M. Paper Making (Cylinder Machine)

1. "Vortraps as Applied to Paperboard Manufacture," by H. E. Ingalls, Nichols Engineering and Research Corp.
2. "Duotrol for Controlling and Refining," by William White, Shartle Bros. Machine Co.

9:15 A.M. Fibrous Agricultural Residues

1. "Progress in the Use of the Test Corrugator," by N. F. Wilson, Alton Box Board Co.
2. "Straw Pulping in Europe," by Joseph E. Atchison, Economic Cooperation Administration.

9:15 A.M. Optical Properties

1. Panel Discussion on Glass.

9:15 A.M. Wet Strength

1. "Mechanism of Retention of Beater Added Urea Resins," by M. N. Fineman and I. J. Gruntfest, Rohm & Hass Co.
2. "Neoprene Latex in the Paper Industry," by R. H. Walsh, W. W. Pockman, J. R. Gallaway, E. P. Hartsfield, and H. H. Abernathy, E. I. du Pont de Nemours & Co., Inc.
3. "Permanence of Wet Strength Paper," by C. S. Maxwell and W. F. Reynolds, American Cyanamid Co.
4. "The Instron Tensile Tester," by George S. Burr and Harold Hindman, Instron Engineering Corp.

2:00 P.M. Water

1. "The Water Problem," by Edward J. Cleary, Ohio River Valley Sanitation Commission.
2. "Paper," by Harry Gehm, National Council for Stream Improvement.
3. "The Waco Filter," by Robert Nivison, Improved Paper Machinery Co.
4. "Operation of the Clariflocculator in White Water Recovery," by F. A. Eidsness, Infilco, Inc.
5. "Economic Considerations in White Water Treatment," by V. J. Calise, Graver Water Conditioning Co.
6. "Control of Sewer Losses," by John G. Dobson, Foxboro Co.
7. "Some Factors Affecting Slime Formation and Freeness of Board Mill Stock," by Willem Rudolfs and Nelson L. Nemerow, Rutgers, University.

2:00 P.M. Plastics

1. "Preparation and Properties of Various Papers for Lamination," by representative of the Forest Products Laboratory.
2. "The Effect of Paper Type and Structure on the Physical Properties of Phenolic Resin Bonded Laminates," by M. P. Seidel, Westinghouse Electric Corp.
3. "The Effects of Paper Type and Structure on the Moisture Dimensional Stability of Phenolic Resin Bonded Laminates," by M. P. Seidel.
4. "The Beater Addition Process for Producing Laminated Materials," by F. H. Snyder, L. Spiwak, and A. E. Moyer.
5. "Resin Properties and Their Effects in Lamination," by C. B. Bennett, Catalin Corp. of America.

2:00 P.M. Chemical Engineering

1. "The Role of the Chemical Engineer in the Pulp and Paper Industry," by G. W. E. Nicholson, Union Bag & Paper Corp.
2. "Chemical and Engineering Unit Operations in the Pulp and Paper Industry," by W. L. Badger, Consulting Engineer.
3. "Stainless Steel Equipment for the Pulping Processes," by W. H. Funk and J. B. Weiss, Lukens Steel Co.

2:00 P.M. Alkaline Pulping

1. "The Pulping of Scrub Oak (Quercus Laevis) by the Kraft Process," by R. L. Harvin, C. W. Rothrock, and W. J. Nolan, University of Florida, and G. B. Hills, Jr., St. Joe Paper Co.
2. "Chemical Cleaning of Black Liquor Evaporators," by H. H. Walthers, Dowell, Inc.
3. "The Operation of the Multi-Roll Beater in a Kraft Mill," by Milton R. Roberts, Hudson Pulp and Paper Corp.

WEDNESDAY, 22

9:15 A.M. Water

1. "Ground Waters," by William F. Guyton, U. S. Geological Survey.
2. "Process Water and White Water Filtration With the Automatic Backwash Sand Filter," by F. C. Schad, Hardinge Co., Inc.
3. "Corrosion Control in Water Treatment," by W. Tanzola, W. H. and L. D. Betz.
4. "Boiler Feedwater Treatment," by C. A. Brumley, Alhydro, Inc.
5. "Flow Instrumentation in the Pulp and Paper Industry," by G. Douglas Zimmerman, Fischer & Porter Co. (Canada) Ltd.

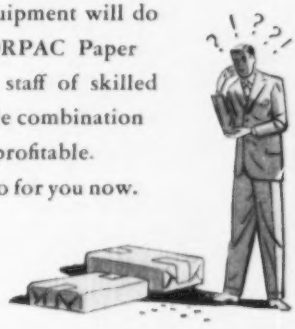
9:15 A.M. Coating

1. "Starch and Its Application in Machine Coating," by Ralph W. Kerr, Corn Products Refining Co.

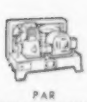
CAN WE HELP

WITH YOUR PACKAGING IN 1950?

To get your business competitive and stay that way this year, production costs should be carefully studied and trimmed wherever possible. Even in packaging, there are ways to turn out a neat product and get it to market more quickly. A reasonable investment in capital equipment will do this. Our line of MORPAC Paper Packaging Machines and staff of skilled specialists are an unbeatable combination in making packaging profitable. Investigate what they can do for you now.



PAR AIR COMPRESSORS



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MORPAC PAPER PACKAGING MACHINES

MORPAC BUTTER & OLEO PACKAGING MACHINES

GLASS FORMING MACHINES

2. "Enzyme Conversion and Its Application to Machine Coatings," by D. A. Hughes and W. L. Craig, R. T. Vanderbilt Co.
Note: A motion picture film, "Effect of Amylase on Starch," will be shown by Sutton Redfern, Standard Brands, Inc.
3. "The Reverse Roll Principle in Coating," by Lawrence W. Egan, Frank W. Egan & Co.
4. "The Insolubilization of Starch by a Lycoid-Mannogalactan Base Material," by Lawrence Gussman, E. F. Frisch, and R. E. Sweeney, Stein, Hall & Co.
5. "Casein and Its Application in Machine Coating," by J. W. Smith and R. T. Trelfa, Hercules Powder Co.
6. "The Rheology of Paper Coatings," by William R. Willets, Titanium Pigment Co.
7. "The Use of the Corn Industry Viscosmeter in the Study of Paste Characteristics of Starch and Starch Preparations," by M. J. Mason, Anheuser-Busch Co.
Note: Papers not completed at this session will be presented at the Joint Coating-Graphic Arts Session in the afternoon.

9:15 A.M. Microbiological

1. "The Preparation and Testing of Mold Resistant Wrapping Papers," by Louis C. Barail, U.S. Testing Co.
2. "Performance of Paper Machine Wet Felts. I. Preliminary Microscopic Observations of the Effect of Microorganisms on the Plugging of Felts," by Stanley Buckman, Buckman Laboratories.
3. "Some Further Observations on *Penicillium Roqueforti Thom*," by John W. Appling and Conan D. Cash, Buckman Laboratories.
4. Paper by B. F. Shema, Institute of Paper Chemistry.

2:00 P.M. Coating and Graphic Arts

1. "The Picking of Paper and Its Relation to Ink Tack," by Andries Voet and Claude F. Geffken, J. M. Huber Corp.
2. "A Viscometer for Printing Inks," by Andries Voet, J. M. Huber Corp.
3. Paper by George Cramer, Sinclair & Valentine Co.
4. Panel Discussion on Printing on Coated Papers.

2:00 P.M. Paper Making (Fourdrinier Machines)

Symposium on Paper Machine Slices.
1A. "Rag Content of Papers," by Robert W. Pattison, Cellulose Fibre, Inc.
1B. "Lightweight Papers," by F. O. Boylon, Crown Zellerbach Corp.
1C. "Newsprint," by Vernon P. Tipka, News Print Service Bureau.
2. "Progress Report on the Curlator," by James Coghill, The Curlator Corp.
3. Paper by T. L. Yocum, E. D. Jones & Sons.

2:00 P.M. Semichemical Pulping

1. "The Manufacture of Chemigroundwood Pulp from Hardwoods," by C. E. Libby and F. W. O'Neil, N. Y. State College of Forestry.
2. "Effect of the Presence of Bark in Semichemical Pulping," by E. L. Keller, Forest Products Laboratory.
3. "Effect of Mild Treatments With Sodium Hydroxide in Producing High Yield Pulps from Aspen," by K. J. Brown and J. N. McGovern, Forest Products Laboratory.
4. "Neutral Sulphite Pulping in the Chemipulper," by R. G. Goodwin, Paper & Industrial Appliances, Inc.

THURSDAY, 23

9:15 A.M. Containers

Symposium on Paper Shipping Case Performance.
1. "An Unscientific Way to Scientific Help in Packaging," by C. S. Macnair, Acme Steel Co.
2. "Suggested Methods for Testing Corrugated Shipping Cases," by E. H. Balkema, Colgate-Palmolive-Peet Co.
3. "Package Evaluation," by E. A. Beardsall, Western Electric Co.

9:15 A.M. Acid Pulping

1. "Relation Between Yield and Properties of Spruce and Aspen Sulphite Pulps," by J. N. McGovern, Forest Products Laboratory.
2. "Ammonia-Base Sulphite Pulping of Hardwoods," by E. F. Thode and Y. H. Lee, University of Maine.
3. "Proven Methods of Screening Maximum Qualities of Quality Pulp," by H. F. Schenk, Magnus Metals Corp.
4. "Circulation Systems and Sulphite Pulping," by J. M. Wilcox, Electric Steel Foundry.

9:15 A.M. Chemical Products

Program on Tall Oil to be announced.

12:45 A.M. Annual Luncheon

1. Presentation of the TAPPI Medal to George H. Mead, Mead Corp.
2. Progress of the European Recovery Administration, by Joseph E. Atchison, E.C.A. Pulp and Paper Division.
Note: This program is subject to change prior to the annual meeting. Committee chairmen and authors of papers are urged to advise R. G. Macdonald, Secretary, TAPPI, 122 East 42nd street, New York 17, N. Y., immediately concerning errors, omissions, and other changes that should be made in the final program.

Superintendents and TAPPI Meet

(Continued from page 21)

when "we begin to treat it as a kind of fuel" which will have to compete in every economic aspect with other fuels.

"Actually we don't yet know how to design an atomic engine for practical use," the speaker said, "but we have estimated that the smallest automobile which could operate safely on atomic power would weigh nearly 75 tons." He added that because of weight considerations a ship would probably see the first application of atomic power for propulsion.

William F. Hathaway, Kalamazoo Vegetable Parchment Co., chairman of the APPMSA, presided at the session. He was assisted by Dr. Stephen A. Kukolich, Lee Paper Co., Vicksburg, TAPPI chairman. Ralph A. Hayward, KVP president, served as toastmaster and introduced the speaker. Shorter addresses were given by Charles H. Reese, national president of the superintendents association, and R. G. MacDonald, national secretary of TAPPI. Officers of various associations who were introduced were: E. T. A. Coughlin, Raymond L. Barton, and Olin Mesmer, all past national presidents of the superintendents; Glen Sutton, Sutherland Paper Co., national vice president of the superintendents, and A. L. Sherwood, also of Sutherland, and superintendents national committeeman; H. E. Weston, executive secretary of the superintendents; and Michigan division officers, William Shaw, Michigan Carton Co., Battle Creek, first vice chairman, O. W. Callighan, Edgar Clay Co., second vice chairman, and R. H. Peeters, St. Regis Paper Co., secretary-treasurer, TAPPI officers introduced in addition to Dr. Kukolich were: Dr. James Harrison, Michigan Carton Co., Battle Creek, vice chairman; Frederick L. Schuker, Hercules Powder Co., treasurer; and John R. Dam, secretary.

Smythe Heads Philadelphia Ass'n.

PHILADELPHIA — T. H. B. Smythe, of the J. L. N. Smythe Co., was named president of the Paper Trade Association of Philadelphia at the organization's 46th annual meeting, January 11.

Other officers named include E. V. Furlong, of Wilcox-Walter-Furlong, vice-president; Harold Isen, of Enterprise Paper Co., vice-president; Alan M. Russell, of Molten Paper Co., treasurer; and Harry Clair, of Progressive Paper Co., secretary.

More than 300 members and mill guests from this and other cities attended the annual dinner at the Downtown Club, at which Byram Saam, noted sportscaster, was the principal speaker.

TAPPI Hears Talk on Isotopes

NEW YORK—Meeting with 400 members and guests of Metropolitan TAPPI at their regular monthly meeting at Fraunces Tavern, Tuesday, January 10, W. C. Nusbaum of Tracer Laboratories, Inc., Boston, explained current uses of radio-active isotopes in industry and speculated on the many applications as yet unexplored.

Only some 3 per cent of the 8000

(Continued on page 28)

Nalco

PITCH CONTROL Produces These Typical Results:

✓ "PAPER MACHINES IN FINE CONDITION"

From a Nalco Engineer's report on The Nalco System of Pitch Control in a mill producing fine papers:

"Beater Room Superintendent reported that paper machines were in very fine condition when examined during shutdown period over the weekend. Trays were reported in very good condition and much better than formerly noted. No sticking on press rolls. Oliver filter reported in good condition, no plugging. The Savalla Saveall reported in very good condition."

✓ NALCO ELIMINATED PITCH AND POPLAR WAX

In a mill manufacturing semi-chemical pulp, another Nalco Engineer reports:

"This company ran into considerable trouble recently from pitch and poplar wax in their semi-chemical corrugated medium. These waxes caused filling of wires and sticking of press rolls which in turn caused up to 30 breaks in a day. Nalco Pitch Control was applied at the fan pump and eliminated their trouble."

THE examples above are typical of the success and versatility of The Nalco System of Pitch Control in paper and pulp mills. Pitch-free operation saves time and money in these mills, and helps to produce a better product.

If you have pitch control problems, write Nalco for full data on the efficient, economical Nalco System as it may apply to your mill.

Nalco
BALL FEEDER
Nalco Ball Feeders utilize Nalco Ball Briquet chemicals weighing one pound each to provide simple, virtually foolproof control of feeding. Where mills have facilities for pulverized or liquid feeding of chemicals Nalco can also provide them.

NATIONAL ALUMINATE CORPORATION
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THE Nalco SYSTEM • Serving the Paper Industry through Practical Applied Science

Abstract of Papers To Be Presented

At Research Review and Open Panel Discussion National Council for Stream Improvement—Waldorf-Astoria Hotel, New York, February 20, 1950

10:00 A.M. Session

This session will be open to all member and non member pulp and paper companies, state, federal and interstate regulatory representatives; representatives of universities and research institutes, consulting engineers and all others interested in industrial waste treatment.

Panel Discussion Leader

Dr. Willem Rudolfs, Chairman, Department of Sanitation, Rutgers University

ABSTRACT OF PAPERS:

Professor Clarence E. Velz—
Stream Analysis

Professor Clarence E. Velz of the Department of Public Health of the University of Michigan will describe methods used in analyzing the ability of receiving waters to assimilate pulp and paper mill wastes. Professor Velz has developed mathematical methods of computing oxygen demand and by this method it has been demonstrated possible to estimate the degree of treatment necessary at any given discharge to meet specified water requirements.

Dr. Harry W. Gehm—
Sulfite Waste Liquor Research

Dr. Harry W. Gehm, Technical Director of the National Council for Stream Improvement will review various sulfite waste liquor abatement methods. Dr. Gehm's presentation will be based on experimental and laboratory work carried on by the National Council at various research institutes and will review the results which can be expected from the use of various treatment methods including: foam phase oxidation, biological oxidation by trickling filters, yeast and filamentous mold production, methane fermentation, adsorption by activated bauxite, catalytic oxidation and heat hydrolysis.

Mr. N. L. Nemerow—White Water and Rag, Rope and Jute Waste Treatment

Mr. N. L. Nemerow of Rutgers University will report on the treatment of white water and rag, rope and jute waste. His report will summarize results obtained on a number of clarification methods including: sedimentation, flotation and filtration both with and without coagulating chemicals. Sludge dewatering studies will be reported on as will the results of procedures developed for the removal of suspended matter from rag, rope and jute waste by sedimentation and clarification with particular reference to the difficulties in dewatering the sludges produced. A report on the experimental treatment of board mill waste by anaerobic digestion will also be presented.

Mr. William A. Moggio—Kraft and Bleachery Waste Treatment Methods

Mr. William A. Moggio, the Council's southern field representative in charge of research activities at Louisiana State University will report on the three years experimental work carried on in connection with the oxidation of liquid waste resulting from kraft pulping processes. This presentation will include a summary of results obtained by oxidizing the waste with and without additional bacterial seed, nitrates, ammonia in the presence of phosphates and magnesium, pH adjustment and waste dilution. Utilization of the treated waste following storage or chemical treatment as a diluent for fresh mill waste by means of recirculation will also be reported on.

Dr. Willis M. Van Horn and Professor R. E. Dimick—
Aquatic Biology and Fishery Problems

Dr. Willis M. Van Horn of the Institute of Paper Chemistry and Professor R. E. Dimick, Head of the Department of Fish and Game Management, Oregon State College will report on aquatic biology and fishery problems. Dr. Van Horn will summarize the results of work carried on in Wisconsin for the past five years relating to the toxic effect of kraft mill wastes on the aquatic environment. He will also report on studies during 1949 relating to the production and control of odors in waters receiving kraft mill waste.

Professor R. E. Dimick will report on the work carried on at Oregon State College for the past two years in relation to the toxic effect of kraft mill wastes on fish species indigenous to the West Coast area.

Professor Don E. Bloodgood—
Strawboard Mill Waste Treatment

Professor Don E. Bloodgood, Professor of Sanitary Engineering at Purdue University will sumarize the work carried on at Purdue University in connection with the treatment of strawboard mill wastes. His report will review the progress of the treatment methods developed from the laboratory stage to a large scale treatment plant which has been in operation at an Indiana strawboard mill for the past year. The method developed is based on high rate digestion, thermophylic digestion of the sludge and the possibility of gas recovery.

Professor Frank C. Vilbrandt—
Semi-Chemical Wastes

Professor Frank C. Vilbrandt, Head of the Department of Chemical Engineering at Virginia Polytechnic Institute will report on the studies being made of semi-chemical pulping waste. His studies to date have included complete analysis of the waste, the preparation of a complete bibliography, a stream survey of the rivers in the South receiving semi-chemical waste and various experimental treatment methods.

Mr. Anthony J. Palladino—
Progress in Deinking Waste Treatment

Mr. Anthony J. Palladino, the Council's resident engineer in Michigan will summarize the past four years' developments in the treatment of deinking mill waste through the laboratory, pilot plant stage and the final construction of a full scale treatment plant at a mill in the Kalamazoo valley.

Features of the full scale plant which are under construction at the present time include the reduction of the B.O.D. and the treatment of the resulting sludges for disposal.

Mr. Vaughn C. Behn—
Sludge Dewatering and Filtration

Mr. Vaughn C. Behn, the Council's resident engineer in Pennsylvania will summarize the studies and experimental work conducted by the Council on sludge dewatering and filtration. In the final analysis the treatment of pulp and paper mill waste generally results in the production of a highly liquid sludge which must be dewatered before it can be disposed of. Mr. Behn's report will include significant data regarding the operation of various filtering devices.

Mr. Joseph F. Baigas—
Mill Waste Survey Procedure

Mr. Joseph F. Baigas, the Council's resident engineer in New England will report on the methods developed in

for color in boxboard

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BISMARCK BROWN RX CONC. DUSTLESS is tinctorially one of the strongest of basic colors. It is a standard requirement for producing browns and tans, and it acts as a dulling agent for the brighter Acid, Basic and Direct colors in both sized and unsized papers.

Although BISMARCK BROWN RX CONC. DUSTLESS does not work well on bleached fibers, its excellent solubility recommends it for both beater and calender coloring.

Specify BISMARCK BROWN RX CONC. DUSTLESS for such paper applications as kraft, poster, tissue, wrapping and boxboard.

AMERICAN Cyanamid COMPANY

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New England for surveying the mill losses from various types of pulp and paper and paperboard mills. His report will include a description of the various meters and weirs developed to assist in making quantitative analyses of the waste. He will also report on various river survey methods including: methods used for analyzing river samples to determine B.O.D., solids, time of passage, and other data.

DISCUSSION:

At this meeting mill representatives, representatives of regulatory agencies and others will be encouraged to participate in the discussion, and questions from the floor on the data presented will be permitted.

FEBRUARY 22, 1950
2:00 P.M. Session

This meeting will be open to all representatives of member and non-member pulp and paper companies, state, federal and interstate regulatory agency representatives and to all others interested in industrial waste treatment and the pulp and paper industry's stream improvement program.

ABSTRACT OF PAPERS:

Mr. L. F. Warrick, Senior Sanitary Engineer, Chief Technical Services Bureau, Division of Water Pollution Control, U. S. Public Health Service.

Mr. L. F. Warrick will report on the activities of the U. S. Public Health Service under U. S. Public Law No. 845 which was enacted in 1948. Public Law No. 845, while recognizing the ideas of the individual states in stream pollution control matters brings interstate waters under some degree of federal control as specified by the provisions of the act. Mr. Warrick will report on the general provisions of the act, relationship with the various state agencies, industrial research programs on industrial and other waste treatment methods, and the organizational setup of the fourteen various districts established by the Public Health Service to carry on its activities under the act.

Mr. Edward J. Cleary—Executive Director, Ohio River Valley Water Sanitation Commission

Mr. Edward J. Cleary will report on the activities of the Ohio River Valley Water Sanitation Commission under the Ohio River Compact which was enacted in 1948. Mr. Cleary will report on the activities of the commission which is composed of members from the various states signatory to the compact and will explain the objectives of the compact and how its program will be carried out under the provisions of the compact.

Mr. Richard Martin—
Director, Connecticut Water Commission

Mr. Richard Martin of the Connecticut Water Commission will summarize the activities of his commission in dealing with municipal and industrial stream pollution on the state level. Mr. Martin will discuss the cooperative activities carried on with the pulp and paper industries and other industries in abating pollution, and will also summarize recent developments in connection with the classification of streams under the New England Interstate Water Pollution Control Compact.

Yale Offers Conservation Course

NEW HAVEN, Conn. — Yale University in cooperation with the Conservation Foundation is establishing the country's first graduate program of research and instruction in conservation of natural resources.

The courses will begin September, 1950, and one of the leading educators and authorities in the field, Paul B. Sears, will be in charge of the Yale program with the rank of Professor of Conservation, a newly-created post.

Professor Sears is now at Oberlin College, but will leave to join the Yale faculty next summer.

The course in conservation will be for graduate students only, although it is hoped that a similar program for undergraduates will be established in the future. The graduate course will require two years of study and research, and will lead to the degree of Master of Science in Conservation, the first time such a degree is to be awarded in this country.

The program will be administered by the Division of Sciences and the Graduate School. "The time has come when the whole field of conservation is so important that the training of competent personnel is a problem for our universities," Edmund W. Sinnott, Director of the Division of Sciences, said in announcing the new Yale program.

The Conservation Foundation, which was founded in 1948 with headquarters in New York, "to promote conservation of the earth's life-supporting resources," has given its support and cooperation to the Yale program.

Fairfield Osborn, President of the Foundation, stated that "this should prove a step of extraordinary importance in the development of the conservation movement in our country.

"The Foundation is glad to enter with Yale into this program that will provide great needed conservation man-power trained at the highest educational level.

"We believe," he said, "that the course taken by Yale will be followed by other universities and colleges throughout the nation."

The inauguration of the Yale program indicates the growing interest of educators in problems of conservation, according to Professor Sinnott.

"Experts are agreed that unless steps are taken to check soil erosion, to cut down the waste of forest reserves, and to conserve other resources, there will be tragic implications for human life," he said. "Serious problems of sociology and economics are involved as well as the whole question of man's stewardship of the earth's resources."

The bulk of present-day conservation work is carried out by the government, he pointed out, but emphasized that there is a need for independent groups to evaluate and initiate conservation procedures and to serve as advisors to government agencies.

Training men at Yale for the professional field of conservation will help supply personnel for such independent groups, he said. Professor Sinnott also explained that there is a growing demand from industry and government, both here and abroad, for men who have been trained in conservation.

Professor Paul B. Sears in directing the Yale program will himself teach two graduate courses—General Ecology and the Ecological Basis of Human Society. In addition, the students will take many of the regular Yale courses already in the University curriculum bearing upon conservation. Some of these are Plant and Animal Ecology, Geology of Soils, Oceanography, Biogeochemistry, Forestry, and Microbiology.

Actually, a considerable part of the Yale program will be centered upon study and research in the field. The Connecticut River Valley, which has been described as an outstanding example of both good and bad conservation practices, will serve as the outdoor "classroom" for the students.

TAPPI Hears Talk on Isotopes

(Continued from page 21)

isotopes produced at Oak Ridge have been put to industrial use, Mr. Nusbaum said. Almost all go to colleges, universities, and hospitals for operative, research and diagnostic work.

Heaviest part of the talk centered about the Tracerlab SM-3 Beta Gauge which makes use of the beta radioactive isotopes to measure the basis weight of paper, coatings, aluminum foils, etc., and has a thousand and one possible adaptations in industry. Mr. Nusbaum said his company sees in isotopes a new tool, not a replacement of conservative techniques.

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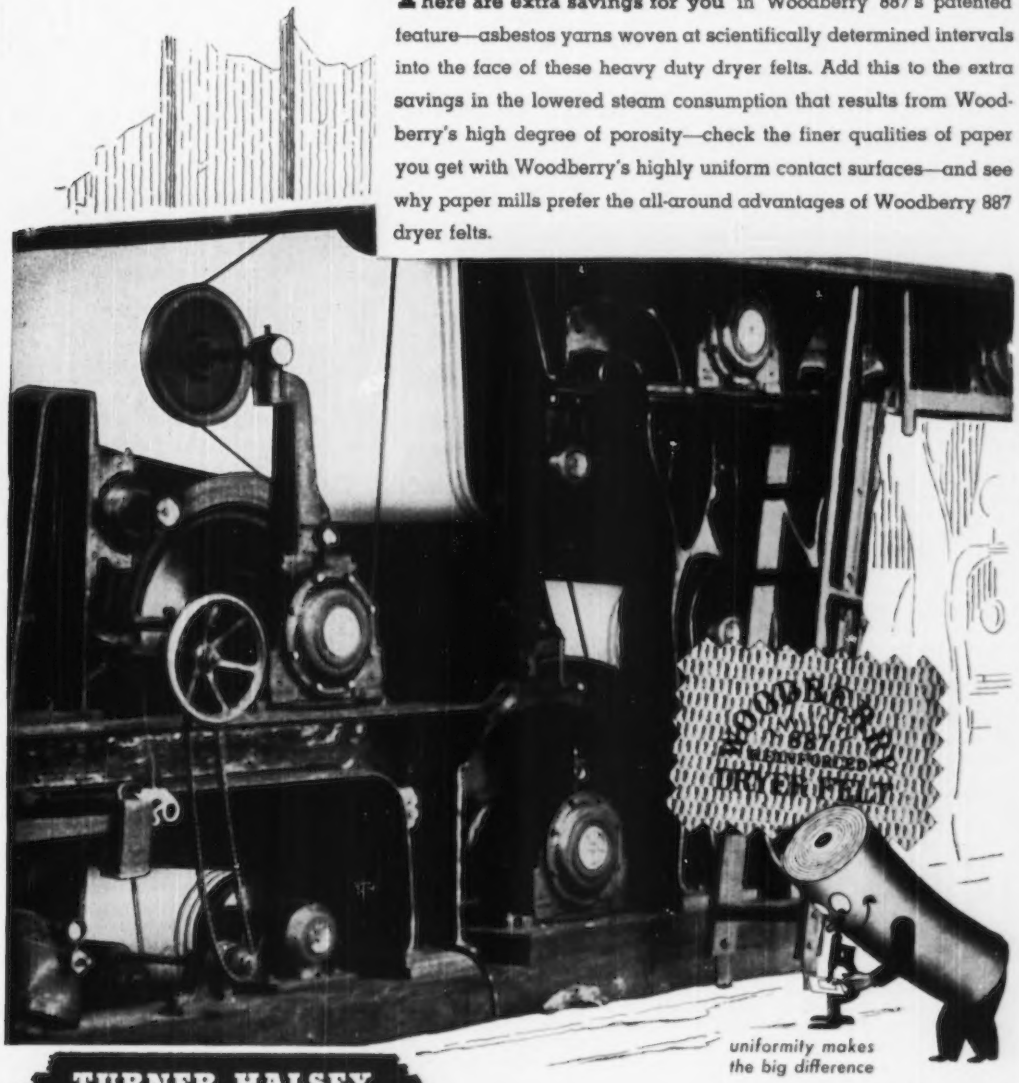

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Export Packaging Failures

The Packaging Committee, Maritime Association of the Port of New York has analyzed container failure in a series of tests. The results show that improvement is desirable and that there is a need for more packaging service by the container manufacturers. The tests were made under the supervision of Frank W. Green, Package Consultant.

Outbound cargoes for twenty vessels of nineteen companies, under seven flags, flying eleven trade routes to all parts of the world were included. Complete notes were made on pier conditions, handling and on all shipments which appeared insufficiently packaged for *normal* export conditions. Many packages were damaged when observed at the piers.

This first phase of the study has been completed. The following discussions cover observations at New York before and during loading of the ships.

Poorly packed shipments included every type of container and practically every American product commonly exported. The commodity groups with the highest number of insufficiently packed shipments were: Glassware and empty bottles, Textiles—piece goods and finished products, Automobile parts, Food, Kitchenware, Toys, Appliances, Household Plastics, Chinaware, Agricultural equipment, Furniture, Packaging Materials, and Cosmetics.

While many poorly packed shipments were to be found in each of these groups there were also some that were well packed. On the other hand there were some commodity groups with a lesser number of poorly packed shipments but without any well packed shipments. The above list was prepared from the pier surveys without reference to other information. A later check showed that it was almost parallel to the claims-paid experience.

When reviewed by container types it is necessary to consider the figures in relation to the total number of shipments in each type of container. On this corrected basis the containers can be listed as follows, starting with the poorest: Cleated plywood boxes (usually second hand and overloaded), Open crates, Corrugated (usually with poor closures, poor interiors and no straps), Sheathed Crates (horizontal sheathing or poor framing), Wirebound Boxes (second hand or of improper size), Bundles, Nailed Wood Boxes, and Solid Fibre Cartons (poor closures).

Actually each of the above types of containers would probably be satisfactory under normal conditions if fabricated and used in accordance with good practice.

Discussion by Containers

The following comments are based upon observations of cargo during the *New York surveys* only:

Nailed Wood Boxes—When properly used, wooden boxes do everything that should be expected. Poor wood (large knots, poor grain and green lumber), light or improperly applied straps or incorrect use of the right nails can spell failure. Long spans must be supported and the boxes must fit the load. Except for boxes of special design they should not exceed 800 pounds. The best boxes are limited to 300 pounds gross weight or less. Straps, especially stapled, are preferable to thicker lumber.

Corrugated Cartons — Corrugated cartons can make reasonably satisfactory export containers if properly used. They require much greater care than any other type of container. The principle weakness observed was poor closures. The second weakness was lack of stacking strength due to weak cartons, poor closures or inadequate interior packaging. It was observed that 200 pound test cartons were not satisfactory.

Solid Fibre Cartons—It was observed that all solid fibre cartons were much better for export than corrugated cartons. V-us containers are too seldom used. Exporters often use V-us in place of wood for light weights. Some shippers pack their domestic cartons in V-us containers for export.

Cleated Plywood Boxes—Most of the poor shipments in plywood were in second hand boxes. They were overloaded, improperly closed and inadequately strapped—many had broken panels, loose nails and ripped cleats before reaching the pier. Quarter inch (and some 3/16 inch) plywood cases seemed satisfactory under 400 pounds if correctly closed and strapped.

Wood Cleated Fibre Boxes—Comparatively few shipments were observed in cleated fibre—mostly second hand.

Open Crates — Open crates are seldom satisfactory. The hold down methods are inadequate, the wood knotty or poorly grained. The design is usually box type and too light for the contents.

Sheathed Crates — Sill type bases leave the floor boards to get loosened and pulled off. Skids are usually adequate—sometimes larger than needed. Crate tops are often weak and corner construction poor. Corner posts, diagonals and vertical sheathing are necessary. Most sheathed crates look rugged but may be damaged by well-intended handling before their weak points are appreciated. Marks for proper slinging are helpful in this connection.

Wirebounds—Open wirebound crates are often better than regular open crates—they are too often used for ranges, washers, etc. Wirebound boxes are excellent as export containers using their domestic cartons as interior packages. They are often too large for the contents. The ends are the weakest part.

Steel Drums—New drums are excellent. Closures must be done as prescribed. Light drums are subject to denting and leakage. Second hand drums (other than I. C. C.) are usually unsatisfactory.

Fibre Drums—Fibre drums correctly used are satisfactory. Closures are important. They should not be used for hardware, paraffin and similar items. Fibre drums must be kept dry.

Wooden barrels, casks or kegs — All new barrels observed were doing a good job—reinforcing head cleats are very desirable. Second hand barrels are not satisfactory for export.

Bales—Under normal circumstances with reasonably good handling bales should carry well although hook and water damage can readily develop and pilferage is common.

Bundles—Straps and ties are too often inadequate, too loose and not properly closed. Skidded bundles of sheet metal are easily damaged. Wrappings and closures of other bundles are very poor. Bundles of packed cartons are seldom satisfactory.

Paper Bags — The closures, shoulders and seams of paper bags are often poorly made. Some wire closures leave exposed ends which out the paper. Overloading is also a fault. All bags are subject to easy puncture but creped kraft in multi-walled bags gives good resistance.

Markings—A great deal of the marking of packages is inadequate, some confusing, some is difficult to locate and to read. Many shipments have too much advertising printed on the packages.

Pier Operations

During the course of the New York surveys many observations were made of the pier and stevedore operations which are summarized below:

Truck Deliveries—It is estimated that more than half of the damage to shipments at New York is caused by poor unloading of the trucks. Any carton over a hundred pounds and any wooden box over three hundred pounds will usually be injured during unloading. In this connection, it should be

understood that the unloading of the truck is an obligation of the shipper or his agent. Accordingly, it is in the interest of the shipper to make certain that a qualified truckman is engaged and that the trucks employed are adequately manned to assure careful unloading of the cargo and, in the case of heavy lifts, are properly equipped to provide a safe unloading, as opposed to the practice of "dumping cargo off the tailboard."

Storage on the Piers — Examples of poor storage were observed:

Heavy wooden boxes placed on top of corrugated cartons, Light cartons supporting heavier ones. Poor palletizing with the cartons extending half their width over the edge of the platforms, Cargo stacked with no regard to arrows and other marks, Heavy crates on top of weak or poorly designed crates, Short or no dunnage between sheathed crates and large boxes, Cartons stacked too high, Piles not straight—tipping badly, Packaged cargo just dumped into the piles, Aisles too few or too narrow and Poor grouping of packages and of commodities.

These irregularities in many instances serve only to aggravate an already bad job of packaging and so not in any wise excuse failure of the shipper to provide adequate packaging. In fact, adequate packaging, even under careless handling of cargo on the steamship pier, would in most cases withstand such treatment—or at least minimize the damage now caused by a combination of bad packaging and careless handling.

Handling to the Ships — Fork trucks often damage sheathed crates or large boxes which are not stored on pallets or are poorly dunnaged. The longshoremen sometimes damage packages when breaking out the piles or when preparing the pallet loads. Mobile cranes with dog hooks are often used on the tops of horizontally sheathed crates. Cargo nets are occasionally used on cartons. Rope slings damage plywood boxes. More and better judgment is needed.

In the Hold — The stevedores generally exercise much greater care in the hold than is usually believed. The individual man semed to do a good job with a difficult situation. The main problem in the hold seems to be lack of equipment. With only hands and their hooks to work with it is surprising that there is not a great deal more damage. The use of the ships' gear to move large sheathed crates and boxes really tests the all-round strength of these packages. Unless the damage is spotted the instant it happens the packages are quickly turned (by the stevedores) so that the damaged face is down or against the cargo. Many times more damage happens during loading than is generally known.

Stowage — Most stowage and securing of cargo is well done. A better understanding of the strength qualities of packages would result in better stowage.

Summary

A surprisingly large number of shipments arrive at the piers already damaged or so poorly packed that it is not reasonable to expect good outturns. Some shippers endeavor to get the steamship companies to accept packages which they know the railroads would refuse. They seem to think that they are putting one over —actually the ones being fooled are themselves.

The right way is always the least expensive. Most poor export packages could be good ones at the same or lower cost—some will cost a little more. If the packaging is well planned and well done it will be the least expensive way. Export packaging need not be expensive but is must be done right.

Shippers are not expected to do the whole job however. As reported there are pier and handling conditions which it is unreasonable to expect a package to withstand.

The extremes of packaging and handling are serious and too numerous. Poor outturns damage the reputation of the shippers and of American exporters in general. Proper export packing develops foreign trade.

Australia Challenges Food Packaging Technologists

The Food Technology Asso. of New South Wales states that the greatest single drawback to the cheap distribution of foods is the fact that in the vast majority of cases there is no such thing as a perfect container.

To transport a ton of flour over any distance some 28 pounds of sacks are required, or in percentages there is an increase of only 1.5 per cent in weight. But if we take the case of most common processed foods we find that the weight increase of the packaged goods ready for transport is often 250 per cent of the weight of the actual food. And as Australia is some 12,000 miles away from some of her potential markets, this increase is of great significance.

The Association has prepared a list of the "musts" of the perfect container:

1. It should be unbreakable.
2. It must retain its shape under all conditions.
3. It should be of such shape that it can be packed with its fellows without any intervening spaces.
4. It should not allow the passage of water vapour or air through its walls.
5. It should be transparent.
6. It should not impart any foreign taste to the goods packed in it.
7. It should be cheap.
8. It should be made from raw materials in abundant supply.
9. It must be capable of standing temperature changes of from 0 deg. Fahr. to 300 deg. Fahr.

The association goes on to say: "Ten years ago the conception of such a container would have been an idle dream, for the methods of ensuring all of the above qualities in a single material would have been technologically impossible.

"Today . . . the development of such a container is only a matter of time. Cellulose itself is a cheap raw material, probably one of the cheapest in existence. Its chemical solution and subsequent regeneration in a transparent form is, however, a costly business. But with the vast turnover which would be ensured if an almost universal container were being produced this cost could be reduced most materially. . . . The necessary research for such a project would be one which would take many months, perhaps years, to overcome all the scientific and industrial headaches involved. Once solved, however, it would place the food industry of Australia in a position of independence from all overseas sources of supply of raw materials for containers."

NEWS OF THE WEEK

(Continued from page 11)

Berwin Sells Dansville Mill

NEW YORK — The Berwin Paper Mfg. Corp., executive offices 295 Madison Avenue, New York 17, N. Y., and mill at Dansville, N. Y., has been formed to take over the properties of the Berwin Paper Co., Inc. The new firm is headed by Victor Cohen, president. It will manufacture the same grades of tissue products formerly made at this mill, including waxing, seat cover twisting, candy twisting, M. F. and creping tissue in white and colors; also kraft tissue up to 19 lbs. The two machine mill resumed operations the week of January 16th.

Fibreboard Names Bundy Vice-Pres.

SAN FRANCISCO — Robert E. Bundy was recently named vice-president in charge of production for Fibreboard Products, Inc. He has been with that organization ever since graduating from the University of Washington in 1927. He is a member of the Technical Ass'n. of the Pulp and Paper Industry and the American Pulp and Paper Mill Superintendents Ass'n.

New appointments at Royal Lace Paper Works, (Inc.), Brooklyn, are (left to right) H. B. Smith, vice-president in charge of sales and advertising; and J. M. Altman, vice-president in charge of syndicate store operations.

Eastern Corp. Acquires Royal Lace

NEW YORK—Eastern Corp., Bangor, Maine, acquired control of all capital stock of Royal Lace Paper Works, (Inc.), Brooklyn, N. Y. New appointments of officers at Royal Lace are as follows: Clyde B. Morgan, president (Mr. Morgan is also president of the parent company); J. M. Altman, vice-president in charge of syndicate store operations; W. A. Rochm, vice-president in charge of production; Marvin Silberman, vice-president in charge of administration; H. B. Smith, vice-president in charge of sales and advertising. Mr. Morgan states that, "No change in the policies of Royal Lace Paper Works, (Inc.) is contemplated."

Royal Lace manufactures and distributes the well known and heavily advertised paper products, "Royledge" paper shelving, "Roylies" lace paper doylies, "Roylining" shelf lining paper. In addition, Royal Lace is one of the nation's leaders in bulk doylie volume with hotels, restaurants, hospitals and institutions.

The acquisition of Royal Lace will further diversify and expand the operation of Eastern Corp., which has for over 50 years manufactured pulp and fine writing papers.

Claremont Announces Sales Policies

CLAREMONT, N. H.—W. A. Kirn, Sr., president of Claremont Paper Corp., advises that the mill is returning to its long established policy of direct mill sales representation, effective January 1. Claremont's office in New York City continues at 342 Madison Avenue. R. B. Gerard, secretary of the corporation, is in charge and Robert L. Nelson is direct mill representative for sales and service. Harold Dunbar, 53 West Jackson Blvd., Chicago, is sales representative in that area. W. S. Hewins, 516 West 48th street, Ashtabula, Ohio, is sales representative in the Cleveland, Detroit, and Buffalo areas.

Gould Asks Electric Plant Transfer

ALBANY, N. Y.—A petition by the Gould Paper Co. to transfer the works, system and franchise of the Gould Electric plant to the Niagara Mohawk Power Corp., is being studied by the Public Service commission.

The price mentioned in the Gould petition is $80,000, but indications were that the approved figure would be considerably below that total. The owners of the Gould plant, located at Lyons Falls, say they want to concentrate on the paper operations and get rid of the utility line.

British Group Visiting Mills Here

WASHINGTON, D. C. — Eight midwestern and eastern cities, and many plants are on the schedule of visits arranged during January for a visiting British industry group studying American packaging methods, it was announced by ECA recently.

Among other places in the itinerary are the Container Corp. facilities at Chicago, Ill., and a meeting with the Society of Industrial Packaging and Material Handling Engineers in New York. Dates of these two stops are respectively, January 9 and 23. The group returns to England January 28.

D. L. Cameron Honored

PALATKA, Fla.—Donald L. Cameron, Sr., purchasing agent of the Hudson Pulp & Paper Corp., has been nominated for the "man of the year" and represented Palatka Lodge No. 1232 BPOE at the Palatka Woman's Club Annual Christmas Ball on December 23.

SUPPLIERS

American Brake Shoe Co. has opened a new sales office at 2620 Maury street, Houston, Texas, in order to provide more direct service to its customers in the Southwest territory. William C. George, who has been appointed sales engineer for the company in this territory, will represent Brake Shoe's American Manganese Steel, Electro-Alloys and National Bearing Divisions in the new office.

Colloids, Inc.'s newest manufacturing unit at High Point, N. C., was opened recently. It is manufacturing the same products as are made at the parent company in Newark, N. J., under the same exacting chemical control and original formulae made available by the home office. All mill and plant processing will be spot-checked by the local technical service staff. The company will be known as Colloids of Carolina, Inc.

Riverside Metal Co., Riverside, N.J., producers of nickel-silvers, phosphor-bronzes, and beryllium-copper, announced on January 4 the appointment of Fred M. Shelley, Jr., and Alfred G. Dennison to the posts of general sales manager and assistant general sales manager, respectively.

The United States Testing Co., Inc., has recently added to its extensive list of apparatus used in the testing of paper, a Gurley-Hill S-P-S Tester. With this apparatus it is possible to make porosity, smoothness and softness measurements on paper materials.

S. B. HEPPENSTALL RETIRES

Heppenstall Co., Pittsburgh, reports that S. B. Heppenstall, Sr., chairman of the board of directors, retired today after 51 years of employment in this steel forgings plant. The association of Mr. Heppenstall with Heppenstall Co. dates back to almost the introduction of the Heppenstall name in Pittsburgh Business life . . . In 1889 his father Sam Heppenstall who died in 1931, became one of the partners in Samuel Trethewey & Co., Ltd., a Pittsburgh manufacturer of steam hammers and rolling mill machinery. The company name changed successively to Pittsburgh Shear Knife & Machine Co., Heppenstall Forge & Knife Co. and in 1930 to Heppenstall Co. Samuel B. Heppenstall came into his father's business as a draftsman in 1897. After a short time he left the company to become an apprentice machinist at the Westinghouse Electric and Manufacturing Co. Two years later he rejoined his father and since that time consistently has risen through the ranks to the board chairmanship.

The Sinclair Co., manufacturers of paper mill wire cloth and dandy rolls, has appointed Edward L. Epperson as sales service representative in the Ohio-Indiana area, with headquarters in Hamilton, Ohio. Mr. Epperson has been with the Sinclair organization for the last six years as a service representative in the New England area. In his new position, he will service the Ohio and Indiana mills with cylinder recovering, as well as act as a sales representative.

The company also announced the appointment of Fred C. Jones as sales engineer in the Mid-Western area. Mr. Jones, who comes to the Sinclair Co. with a broad background of experience in the paper industry, will consult with the Mid-Western Paper Mills concerning the use of Sinclair products, and do preliminary engineering for various installations.

David Sinclair has been placed in charge of all manufacturing at the Sinclair factory, and Richard Sinclair is now sales manager and executive assistant to Peter S. Sinclair, president of the firm, who will continue in his present capacity as the active director of the company's operations.

The Red-Ray Manufacturing Co., Inc., New York City, has named Ronningen Engineering Sales of Vicksburg, Mich., as sales representatives in Ohio, Michigan, Wisconsin and Minnesota. They will work on the application of radiant gas burners to the many drying problems in the paper industry.

Freeport Sulphur Co., has elected Roy B. Johns a vice-president. Mr. Johns joined the organization in 1915 and has been assistant vice-president and sales manager since 1930.

MAYO AND NEVILLE ELECTED

Two officers of F. H. McGraw & Co., international engineering and construction firm, have been elected to the board of directors. They are Frederick J. Mayo of New York (right) and Donald W. Neville, Chicago. Both men are vice presidents of the company and have been in the engineering and construction field for a number of years. Mr. Mayo is in charge of McGraw's New York office and the company's foreign operations. Mr. Neville heads up the company's Chicago office. He supervised early construction of the Coosa River Newsprint plant at Childersburg, Ala.

NEW RESEARCH LAB FOR COWLES CHEMICAL CO.

Cowles Chemical Co., Cleveland, Ohio has moved its research and development laboratory from the campus of Syracuse University to greatly enlarged quarters at 105 South Townsend street in downtown Syracuse . . . The new laboratory is of fire-proof construction having a reinforced concrete floor, brick walls, and sheetrock ceiling. Main aisles run lengthwise down each outside wall of the building with Kewaunee metal work tables placed perpendicular to them, so that there is complete access on all sides. The laboratory is located on the second floor of the building, and safety is further provided by a ramp leading to the ground floor at one end, two exits at the other end and a full stair-type fire escape at one side of the building. Safety showers have been installed, and portable carbon dioxide fire extinguishers located on all walls . . . The laboratory benches consist of double tables, 16 feet long, with sinks at one end of each. Hoods of the baffle type, six feet long, in pairs, butt up against the opposite end of the double work tables. The surfaces are of soapstone. Adequate services consisting of hot and cold water, gas, compressed air, 110 and 220-volt AC current are supplied to all work benches. The services are carried to sources above the ceiling, so that these lines are almost entirely concealed. Fluorescent lights are used over the benches. Special equipment located along the outside walls include glass blowing table, low distillation bench, large oven, automatic electric water still, chipped ice storage chest, and drafting table . . . Research projects at Syracuse are conducted by a staff of twenty chemists and engineers under the direction of Dr. C. W. MacMullen. An inspection period and reception is planned for late January.

Westinghouse Electric Corp., announced the appointment of Glenn A. Caldwell as engineering supervisor of the Detroit Engineering and Service Department, with headquarters in Detroit.

Mr. Caldwell joined Westinghouse as a graduate student trainee in 1927. In 1928 he was assigned to the control engineering department, and a year later to the steel mill section of the industry engineering department. In 1942 he was transferred to the general mill section of the department, and was appointed manager of that section in 1944. Three years ago he was named manager of Industrial Control engineering, from which position he comes to his new responsibilities.

Koppers Co., Inc., announced five executive appointments in the central Research Department on January 11. Dr. F. L. Jones has been named manager of the Research Administration Section. In this new post, Dr. Jones will be responsible for liaison between the Research Department and Koppers' various divisions and departments, and will act for the manager and associate manager of the Department in their absence. Other appointments were those of Dr. W. J. Monacelli as assistant manager of the Patents Section; Dr. G. A. Webb as assistant manager of the Development Section; Dr. R. H. Hartigan as assistant manager of the Laboratory Section; and B. K. Pospishil as manager of the Experiment Station at Koppers Seaboard Plant in Kearny, N. J.

Pennsylvania Salt Mfg. Co., has announced the formation of a Public Relations Division with Cleveland Lane as manager. Mr. Lane, who previously served as Pennsalt account executive with Geare-Marston's Public Relations Department, came to Pennsalt from the Home Life Insurance Co. in New York where he was manager of the Field Service Division. Before his four years of war service with the Army, Mr. Lane was associated with the Brush-Moore Newspapers in Ohio.

Industrial Brownhoist Corp., Bay City, Mich., has recently appointed H. C. Atwater district sales manager of their New York office in charge of the New York territory. Mr. Atwater, prior to his appointment, served in the New York office for several years as sales representative under H. D. Wright who six months ago was transferred to San Francisco as director of sales, Western Region.

Stein, Hall & Co., Inc., report the removal of their Atlanta office to new and larger quarters at 80 West Peachtree Place, N.W., Atlanta, Ga., as of January 2. The telephone number remains the same as before—Alpine 1821.

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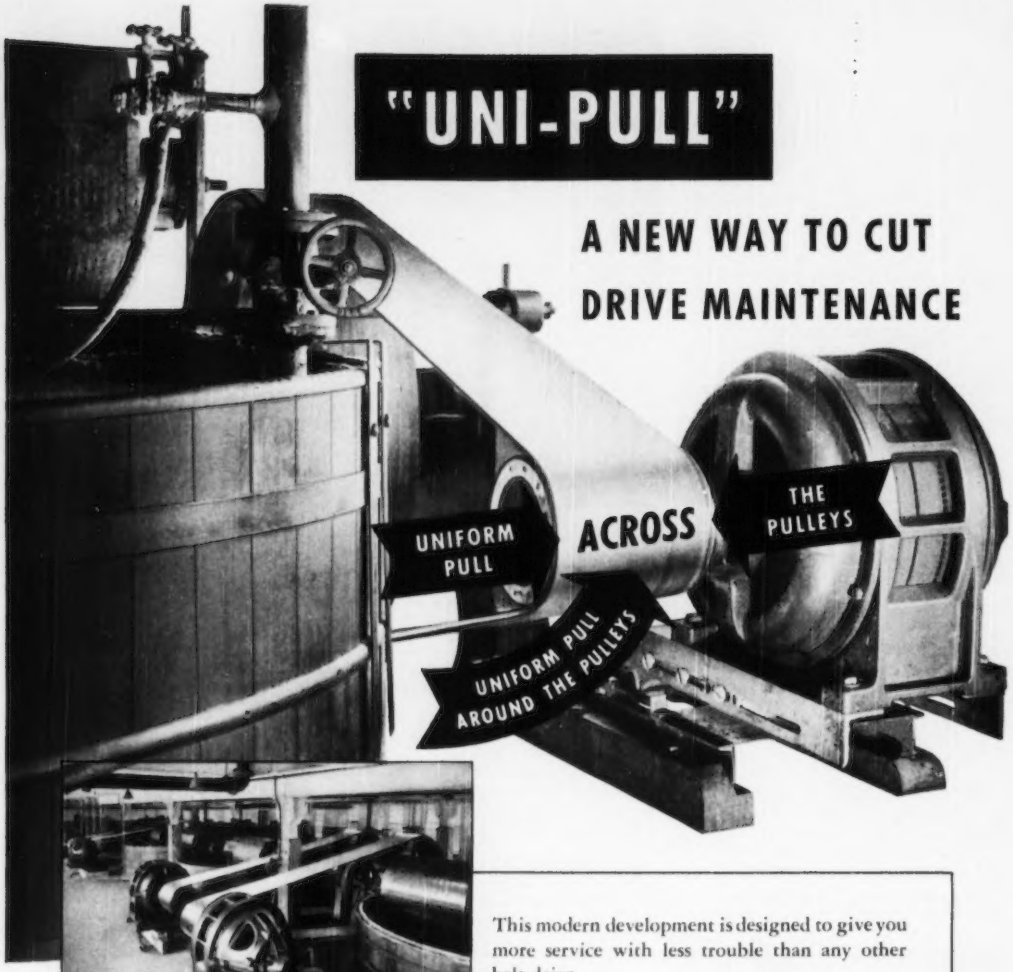

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AL-37

Selecting Paper Mill V-Belts

By

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Belts used in modern paper mills are usually of the V type. These have supplanted the older flat belt because they require less space, maintain exact speed ratios, are smooth starting, require less maintenance, and are easy on bearings. Since reliability and continuity of operation are of prime importance in paper manufacturing, proper application of V-belts is necessary, otherwise important power and production of services might be interrupted. A good working knowledge of proper application procedures for belts used in paper operations can be obtained by a study of belt types, construction, and operating characteristics.

Belt Types

Standard industrial V-belts are made in five cross-sections, *Figure 1.* Each cross-section is made in a variety of lengths to suit particular applications. Typical dimensions and other physical characteristics are summarized in *Table I.* Sizes and weights are somewhat approximate because they vary slightly from one manufacturer to another. Materials of construction also vary but most modern V-belts will be found to consist of fabric and cords molded in rubber and covered with fabric.

TABLE I.

Properties of V-Belts

Cross Section	Size, outside width x dept, inches	Wt., lb. per ft.	Min. grooved pulley pitch dia., ins.	Min. flat pulley diameter, inches
A	0.5156 x 0.2813	0.06	3	17
B	0.6875 x 0.4063	0.106	5.5	24
C	0.9375 x 0.5625	0.20	9	42
D	1.3125 x 0.7500	0.40	13	32
E	1.5938 x 0.9063	0.60	21.5	62

Recommended cross-sections for various motor horsepowers and speeds are listed in Table II. Since there is a most economical cross-section for every paper application, Table II is handy when selecting belts. Cross-sections in parentheses are not usually the most economical but they are used where pulley dimensions make them desirable.

The term *standard V-belt drive* presumes use of a grooved pulley on both the driving and driven unit. When the large pulley diameter is several times that of the smaller, a grooved surface on the large pulley may not be necessary. The drive then consists of a grooved small pulley, a set of standard V-belts, and a large flat pulley and is known as a *V-flat drive.* These drives are not quite so common as standard V-belt drives. Savealls, washers, feeders, refiners, and vacuum deckers are a few of the units using standard V-belts in paper manufacture.

Table II

Recommended V-Belt Cross-Sections For Various Horsepowers and speeds

Horsepower Transmitted	Motor speed, revolutions per minute						
	1750	1150	870	690	575	490	435
½	A	A	A	..	..	..	..
¾	A	A	A	..	..	..	..
1	A	A	A(B)	..	..	..	..
1½	A	A(B)	B(A)	..	..	..	..
2	A	A(B)	B	..	..	..	..
3	B(A)	B	B	..	..	..	..
5	B	B	B	..	..	..	..
7½	B	B	B	..	..	..	..
10	B	B	B(C)	..	..	..	..
15	B(C)	B(C)	C(B)	..	..	..	..
20	C(B)	C	C	C	..	..	..
25	C	C	C	C	D	..	..
30	C	C	C	D	D	..	..
40	C	C(D)	C(D)	D	D	..	..
50	C	C(D)	D(C)	D	D	E	E

Belt Selection

There are many instances where belts must be selected for new or existing equipment used in paper mills. During planning of new drives, maintenance of worn equipment, and changes in power transmission belt type, it is usually necessary to choose a set of belts for given operating conditions. Belt calculations involve only simple arithmetic but the severe operating and atmospheric conditions sometimes encountered in paper manufacturing require that service conditions be most carefully considered. A typi-

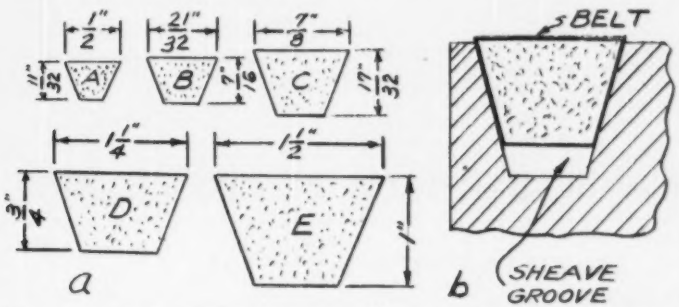
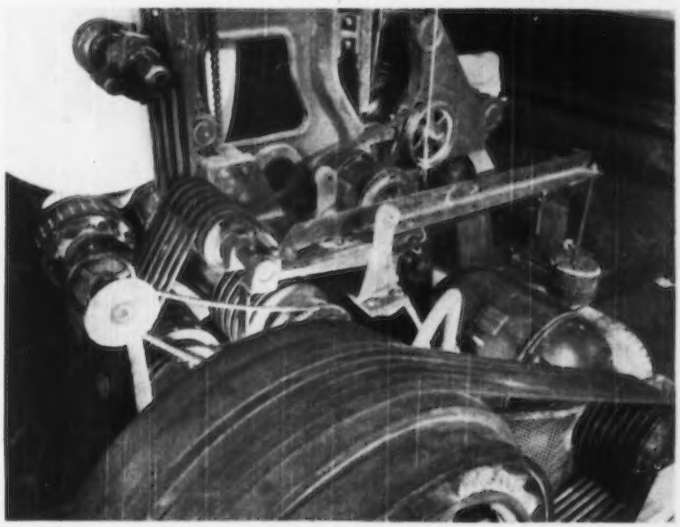


Figure 1. (a) The five standard cross-sections of V-belts available today. Dimensions shown are typical; there may be slight variations from one manufacturer to another. (b) Enlarged view of a V-belt in a sheave groove. The groove has about the same dimensions as the belt but is 3/16", or so, deeper.

Figure 2. Details of Motion Control Vari-Pitch Drive Showing Tightener and Adjusting Mechanism on Winder at Combined Locks Paper Co. Combined Locks, Wisconsin.



cal selection problem will illustrate the methods generally used.

Problem. It is proposed to drive a 1000 rpm pulp screen through V-belts from a 5 horsepower, 1750 rpm motor. Center distance between vibrator and motor shafts is approximately 27″. Determine belt cross-section, length, and number of belts necessary for the drive.

Solution. Before the belt section can be chosen, the actual horsepower of the drive must be determined. *Table III* lists service factors based on average conditions. Inspecting these, it is seen that factors *c*, *e*, *f*, *g*, and *i* will probably apply. This means that continuous service, excess oil, dust, heat, and water might be encountered at the pulp screen during belt operation. Hence, summing the service factors and taking 50% of the result, as noted in Table III, 0.3 + 0.2 + 0.25 + 0.2 + 0.2 = 1.15/2 = 0.575, say 0.60. Therefore, service factor = 1.00 + 0.60.

Then, actual horsepower of the drive, taking probable operating conditions into consideration, is 1.6(5.0) = 8.0. From *Table II*, a B section is suitable for an 8 horsepower drive. The ratio of the driver to driven speed is 1750/1000 = 1.75. From *Table I*, the minimum pitch diameter for a B section is 5.5″. Hence, the pitch diameter of the driven pulley when the driver pulley has a 5.5″ diameter is, 5.5″(1.75) = 9.62″. In other words, to find driven pulley diameter, multiply driver diameter by the speed ratio of the pulleys. Checking with manufacturer's tables of standard pulley sizes, it is seen that 5.5″ and 10.4″ diameter pulleys are available. These will be satisfactory.

The length of each belt is found from,

$$L = 2K + 1.57(D + d) + \frac{(D - d)^2}{4K} \quad \ldots\ldots(1)$$

where

L = belt pitch length, inches
D = pitch diameter of large pulley, inches
d = pitch diameter of small pulley, inches
K = center distance between shafts, inches

For this drive,

$$L = 2(27) + 1.57(10.4 + 5.5) + \frac{(10.4 - 5.5)^2}{4(27)}$$

L = 79.17″, closely.

The nearest stock size of V-belt, from manufacturer's tables, is 80.1″.

The center distance necessary with a 80.1″ long belt and the pulley dimensions given above can be found from the general equation for any V-belt drive,

$$K = \frac{D^2 - d^2}{1.57(L - R)} \quad \ldots\ldots(2)$$

where the symbols are as before and

$$R = \frac{\text{driver rpm}}{\text{driven rpm}}.$$

Hence,

$$K = \frac{(10.4)^2 - (5.5)^2}{1.57(80.1 - 1.75)}$$

K = 27.3″, closely.

The arc of contact of the belts is given by,

$$AC = 180° - \frac{60(D - d)}{K} \quad \ldots\ldots(6)$$

or

$$AC = 180° - \frac{60(10.4 - 5.5)}{27.3}$$

AC = 169°, closely

V-belts used paper mill drives are most frequently installed in multiple because a single belt cannot transmit the required power for usual units. *Table IV* summarizes power ratings for belts used on paper machinery. Belt speed in feet per minute is given by, Speed = 0.262dS, where S = motor rpm, or for this pulp screen, 0.262(5.5)(1750) = 2520 ft per min. From *Table IV*, for a B section, a 5.5″ motor sheave pitch diameter, and a 2520 ft per min belt speed, each belt can transmit 3.1 horsepower. Correcting for arc of contact, using the factor 0.98 from *Table V*, horsepower per belt = 3.1(0.98) = 3.04. Hence, 8/3.04, or 3 belts are required.

This problem indicates the principal methods in use for paper mill belt selection. Some belt manufacturers use slightly different tables from those presented here but the basic data included are essentially the same. Selection procedure for V-flat belt drives is similar to that shown above for standard V-belts. As can be seen by a study of this example, the service factors used are most important in final belt selection. In general, a factor somewhere between 1.2 and 1.6 should be selected, according to whether moderate or severe service conditions are expected in the paper mill. Maintenance men and foremen in paper mills are often better equipped to select

Table III
Service Factors for V-Belt Drives

Operating conditions:	Service factors
a. Starting peaks in excess of motor rating and/or momentary running peaks in excess of motor rating	
(1) 150% of motor rating maximum	0.20
(2) 200% of motor rating maximum	0.50
(3) 250% of motor rating maximum	0.80
b. Frequent starting and stopping	0.20
c. Continuous service (16 to 24 hrs./day)	0.30
d. Pulsating driver (gas or Diesel engine)	0.20
e. Excess oil	0.20
f. Excess dirt, sand, or dust	0.25
g. Excess heat to 140°F, maximum	0.20
h. Excess heat to 200°F, maximum	0.40
i. Excess water (or other liquids which do not attack rubber or fabric)	0.20

Note: Where two or more of these conditions exist in any one drive, add the individual service factors and apply the following percentages:
Two conditions—use 85% of the sum of the two figures
Three conditions—use 70% of the sum of the three figures
Four conditions—use 60% of the sum of the four figures
Five conditions—use 50% of the sum of the five figures.

Table IV
Horsepower of A, B, C, D, and E Belts

Motor sheave pitch dia., inches		Belt velocity, feet per minute							
		1000	1500	2000	2500	3000	3500	4000	4500
	3.0	0.7	1.0	1.3	1.5	...	...	...	...
	3.4	.8	1.1	1.5	1.7	2.0	...	...	...
A	3.8	.9	1.3	1.6	2.0	2.2	2.5	...	...
	4.2	.9	1.4	1.8	2.1	2.4	2.7	2.8	...
	4.6	1.0	1.4	1.9	2.3	2.6	2.8	3.0	3.2
5.0 and up		1.0	1.5	2.0	2.4	2.7	3.0	3.3	3.4
	5.5	1.4	2.0	2.6	3.1	3.5	3.8	4.0	4.0
B	5.8	1.5	2.1	2.8	3.3	3.8	4.1	4.4	4.4
	6.2	1.6	2.3	2.9	3.5	4.0	4.4	4.7	4.8
	6.6	1.7	2.4	3.1	3.7	4.3	4.7	5.0	5.1
7.0 and up		1.8	2.5	3.2	3.9	4.5	4.9	5.3	5.4
	9.0	2.8	4.2	5.5	6.6	7.6	8.4	9.1	...
C	10.0	3.1	4.6	6.1	7.3	8.5	9.4	10.3	10.7
	11.0	3.4	5.0	6.5	8.0	9.2	10.3	11.3	11.8
12.0 and up		3.6	5.3	7.0	8.5	9.8	11.0	12.2	12.7
	13.0	5.1	7.3	9.7	11.6	13.3	14.6	15.6	...
D	14.0	5.6	8.2	10.7	12.9	14.4	16.5	17.8	...
	15.0	6.1	9.0	11.7	14.1	16.3	18.1	19.6	20.3
	16.0	6.5	9.6	12.5	15.1	17.5	19.5	21.3	22.1
17.0 and up		6.8	10.1	13.2	16.0	18.6	20.7	22.8	23.5
	21.0	8.5	12.5	16.2	19.6	22.7	24.9	26.6	...
	22.0	9.0	13.2	17.2	20.8	24.0	26.6	28.5	...
E	24.0	9.8	14.5	18.9	23.0	26.5	29.5	31.9	33.5
	26.0	10.5	15.6	20.3	24.7	28.6	32.0	34.7	36.7
28.0 and up		11.1	16.5	21.6	26.3	30.5	34.2	37.2	39.5

Note: Belt velocities greater than 5000 ft. per minute are not ordinarily used. For drives requiring belt velocities of 5000 fpm or more, refer the case to the belt manufacturer.
Belt speed = 0.262dS.

Table V
Arc of Contact Correction Factors

Arc	180°	170°	160°	150°	140°	130°	120°	110°
Factor	1.00	0.98	0.95	0.92	0.89	0.86	0.83	0.79

V-belts than an outside engineer because they have a complete knowledge of actual operating conditions in the mill.

V-Flat Drives

The advantages of V-flat drives result from the lower cost of ungrooved pulleys and the ease with which an existing flat belt drive can be transformed to a V-belt drive. V-flat drives are most practical when the speed ratio is at least 3 to 1, or more, and the center distance is about equal to the diameter of the large flat pulley. When these conditions obtain in paper mill drives, about the same number of V-belts are required as for two grooved pulleys. Although longer center distances may be used, the arc of contact on the larger pulley is decreased and the number of V-belts needed is increased.

Installation

Selection of the proper belts for paper mill drives is only the first step towards reliable operation. Correct installation and maintenance procedures are equally important. Many good belts have been ruined by crude installation methods and improper maintenance.

Table VI
Installation and Take-Up Adjustments

Nominal length of V-belt, inches	Minimum allowance below standard center distance for installation, inches					Minimum allowance above standard center distance for take-up, inches
	A	B	C	D	E	All cross-sections
26 to 37, inclusive	¾	1	...	...	...	1
37 to 59, "	¾	1	1½	...	...	1½
60 to 89, "	¾	1¼	1½	...	...	2
90 to 119, "	1	1¼	1½	...	...	2½
120 to 157, "	1	1¼	1½	2	...	3
158 to 194, "	...	1¼	2	2	2½	3½
195 to 239, "	...	1½	2	2	2½	4
240 to 269, "	...	...	2	2½	2½	4½
270 to 329, "	...	...	2	2½	3	5
330 to 419, "	...	...	2	2½	3	6
420 and above	...	...	...	3	3½	1.5% of length in feet

A minus allowance on shaft center distances is necessary to permit belt installation without strain. Where a take-up (idler pulley) is used, a plus allowance for take-up must be provided. *Table VI* lists the minimum allowances for installation and take-up. These values should never be decreased, otherwise belt life may be considerably shortened. Pulleys should always be exactly in line and the shafts of driving and driven units parallel.

Paper mill maintenance men should not let the arithmetic involved in belt selection scare them. With their detailed knowledge of mill operating conditions, they can usually make a better selection of belts than a man unfamiliar with the mill. Reduced operating and maintenance costs are certain to result, and the maintenance man has greater peace of mind during production because he knows exactly what his belt drives can do.

Some Aspects of Oxidizing Sulphate Black Liquor

By

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Thilmany Pulp and Paper Company, Kaukauna, Wisconsin

The application of various means for reducing the sodium (and only incidentally some of the sulphur to some extent) losses in sulphate mills has received considerable attention within the past few years. The reduction of stack losses by the use of electrostatic precipitators and, more recently, various types of scrubbers has met with remarkable success. Installations of vacuum pulp washing systems have also effected a saving in salt cake in many mills. These two points of loss have received the most attention and efforts to reduce the losses have been well rewarded technically and economically.

Now that the sodium loss can be minimized, attention has been focussed on the sulphur loss for several reasons. From the standpoint of mill operation, improved sodium recovery has accentuated the fact that in the kraft recovery system the sulphur is lost out of proportion to sodium and desired sulphidity of cooking liquors has been difficult to maintain. From the public relations perspective, the loss of odoriferous sulphur compounds to the atmosphere and streams in the vicinity of some recently constructed mills has resulted in a storm of criticism and action on the part of neighbors. It is a sad commentary on the operation of any mill that the flail of aroused public opinion is necessary to bring about at least the investigation of certain ideas, relative to the prevention of sulphur losses, which have circulated through the industry for a number of years. That there may be eventually a sound economic advantage in preventing some of the sulphur losses should embarass us still further for our lack of effort in this direction.

At this time it is of interest to consider the sulphur losses which occur in the kraft recovery system rather than in the digester and washer room. In the recovery system, the two main points of losses of sulphur, out of proportion to sodium, are in the condensate and non-condensible gases from the vacuum evaporators and the stack gases from the recovery furnace. On the basis of the evidence that has been presented so far, it appears that much of the sulphur lost is in the form of hydrogen sulphide, although some sulphur dioxide and trioxide may possibly be found in the recovery stack gases as well. Some investigators of the subject have held that there are no mercaptans in the black liquor entering the vacuum evaporators and that therefore none are formed and lost before the liquor is regenerated and back into the digester. Others point out that mercaptans released upon combustion of the black liquor would be burned in the furnace. Still others claim to have found mercaptans in the evaporator wastes and in the furnace gases.

Collins and Collins *(1)* have reviewed much of the past work concerning the sulphur losses from sulphate recovery furnaces and the reader is referred to Table 4 of that summary for that data.

Venemark *(2)* has suggested that when concentration of black liquor is carried out in direct contact evaporators, sulphur losses are caused by the action of acidic flue gases but that oxidation of sulphur compounds by air reduces this loss. He lists the sulphur loss at over one-half upon the destructive distillation of black liquor. Extensive data are given which show that overloading or using insufficient air in the furnace increases the hydrogen sulphide loss whereas more normal operation with sufficient and properly distributed air tends to produce some sulphur dioxide. At higher liquor sulphidities, the sulphur loss from the furnace is increased.

Murto *(3)* has reviewed the measurements made by Bergstroem and Trobeck *(4)* in which it was shown that 44 percent (10.4 Kg.S/metric ton of pulp) of the total sulphur (23.7 Kg.S/metric ton of pulp) lost in the kraft mill was lost from the recovery

furnace as hydrogen sulphide (0.092 percent by volume), methyl mercaptan (0.132 percent by volume), and dimethyl sulphide (0.013 percent by volume). Murto came forth with the suggestion that one way to raise cooking liquor sulphidity is to use black liquor with a high sulphide content for dilution of the white liquor.

The statement has been made by Gordon and Creitz *(5)* that mercaptans appear in recovery stack gases when the furnace is operating under poor conditions for combustion, such as when destructive distillation occurs in the spray furnace if the liquor solids and furnace temperature get too low. Klason *(6)* has pointed out that destructive distillation produces hydrogen sulphide but Bergstroem, Cederquist, and Trobeck *(7)* found no hydrogen sulphide liberated on heating black liquor as high as 350°C.

Factors Affecting Sulphur Losses in Kraft Recovery

A number of years ago, the problem of sulphur losses received considerable attention at Thilmany and M. G. Schmitt made a number of mill tests of various liquors to check the losses. At that time, several old-style rotary furnaces were being operated and although the results of these studies do not necessarily fit exactly the modern recovery system, nevertheless they indicate what is taking place even in the present day set-up. It is of interest to review this data and the ideas expressed by Schmitt over ten years ago.

Over an extended period, Schmitt found that 12.3 percent of the sodium and 45.7 percent of the sulphur introduced into the recovery cycle were lost per turn-over of liquor.

$$\text{Percentage lost} = \frac{\text{Loss/turn-over} \times 100}{(\text{Amount added/turn-over}) + \text{Inventory}}$$

The next step was to try to locate the points at which the sulphur losses occur and for this Schmitt determined the S/Na ratios on samples of white liquor, weak black liquor, liquor from the vacuum evaporators, liquor from the disk evaporators, and black ash. Total sodium was determined after removing iron, aluminum, etc., and evaporating the sodium as the sulphate to dryness in a platinum crucible. Total sulphur was determined after sodium hypobromite oxidation of the sample and it was found that in general this procedure gave lower results than can be obtained by combustion of the sample in a calorimeter bomb with sodium peroxide. The data are given in *Table I*.

Since it was so obvious that destructive distillation of the black liquor in the rotary burner is responsible for the major portion of the sulphur loss, Schmitt next dried 5 milliliter samples of weak black liquor on filter paper at room temperature in an air stream. The samples were than placed in an oven for one hour at different temperatures and the sulphur content was then determined by peroxide oxidation with the results shown in *Table II*.

Table I

The Sulphur Sodium Ratios in Materials at Various Points In the Kraft Recovery System

Sample	S/Na	Sulphur Retained (%)
White Liquor	0.169	...
Weak black liquor	0.173	100.0
Liquor from vacuum evaporators	0.150	86.7
Liquor from disk evaporators	0.163	94.2
Black ash from rotary burner	0.093	53.7

Table II

Sulphur Loss of Weak Black Liquor Sample (dry) After Heating for One Hour

Sample	Temperature (°C)	Sulphur Lost (%)
1	20	0
1A	150	15
1B	300	43

On the basis of the theory that sulphur is lost from the liquor because of decreased alkalinity during heating, caustic was added to the sample to double the free alkali present but this did not prevent the sulphur loss at 300°C. If the black liquor was neutralized with acetic acid before it was dried on the filter paper, the sulphur loss was still the same on heating, according to Schmitt.

Schmitt then analyzed these samples to determine quantities of the various sulphur compounds present as shown in *Table III*. Total sulphur was determined by sodium peroxide oxidation and the other components by iodine and acid titrations. Strontium chloride was substituted for barium chloride in the conventional methods of analysis.

Schmitt summarized the work he had done in a paper *(8)* prepared for presentation to the Northwestern Division, Superintendents' Association meeting at Madison, Wisconsin, on October 22, 1938. He concluded that the high sulphur loss in the kraft recovery furnace is due to the thermal instability of the sulphur compounds of a low degree of oxidation of the sulphur. Specifically, his paper stated that "the sulphides completely disappear at low temperatures, thiosulphates decrease by volatilization or conversion to sulphates, and organic sulphur compounds are unstable toward heat." He also pointed out that in the recovery system some oxidation of the sulphur compounds is taking place whenever the liquor is in contact with oxygen.

It was concluded that loss of sulphur gases can be reduced by oxidation of the unoxidized sulphur compounds in the black liquor. Schmitt suggested that this be accomplished by contacting the liquor with air or by electrolytic methods.

Effect of Oxidation on The Sulphur Compounds in Sulphate Black Liquor And Their Stability When Heated

Some years after this original work, the author decided to recheck the earlier observations made by Schmitt. A sample of weak black liquor was secured and part of it was analyzed as quickly as possible before any great changes could occur through oxidation of the unoxidized sulphur compounds. The balance of the sample was placed in a water bath at 180°F. and hot, saturated air was blown through it with a bubbler until the liquor gave no qualitative test for residual sodium sulphide. Foaming of the sample was reduced by occasional addition of a few drops of kerosene. When a simple bubbler was used, three hours aeration were required to oxidize the sulphide sulphur present. The sample of oxidized liquor was then analyzed by the same procedure (TAPPI T625 m-44) used for the original liquor and the data are shown in *Table IV*.

The next step was to determine the effect of oxidizing black liquor on sulphur retention when a dry sample is heated. These tests were made by drying 5 ml. of black liquor samples on filter papers at room temperature for 24 hours. (Actually, this results in oxidation of the original un-oxidized sample.) The samples were then heated at various temperatures for one hour in a furnace in open crucibles and the total sulphur values, given in *Table V*, were then determined.

Table IV

Changes in Sulphur Compounds by Oxidation of Black Liquor

	Original Sample 2	Oxidized Sample 2A
Total solids (%)	19.5	...
Total sulphur (g./l.)	6.56	6.45
Sodium sulphate (g./l.)	3.97	5.48
Sodium sulphide (g./l.)	9.01(a)	1.02(b)
Sodium sulphite (g./l.)	0.18	0.00
Sodium thiosulphate (g./l.)	4.07	11.75
Total sulphur by addition (g./l.)	6.292	6.422

(a) Corrected only for sulphite measured in liquor, since sulphite was not removed prior to sulphide determination.

(b) Boiling the liquor sample with ammonium chloride and absorbing the evolved gases in acidified cadmium chloride solution gave no precipitate of cadmium sulphide so sodium sulphide was apparently not present. A recent paper by Collins discusses this discrepancy. This could be due to sulphur dioxide released from sodium thiosulphate.

Table III

Sulphur Compounds in Various Samples of Liquor (Gram/liter)

Liquor	Total Na	Total S	Na_2SO_4	Na_2SO_3	$Na_2S_2O_3$	Na_2S	Percentage of Original Sulfur
Black	28.8	5.64 (3.85*)	2.57	1.76	3.79	3.12	100
Black (1 hr. at 300°C.)	28.8	3.19 (2.31*)	4.71	3.28	1.26	0.00	56.7
White (Calculated for comparison)	28.8	5.50	2.10	...	0.87	11.40	...

* Total of sulphur content of various sulphur compounds in analysis.

This indicates that oxidation of the sulphide sulphur in the black liquor does not greatly reduce the sulphur loss at high temperatures. There is a great probability that more of the sulphur was lost from the samples as sulphur dioxide when the liquor was oxidized than when it was not. If the sulphur loss is in the form of sulphur dioxide, recovery becomes a simple procedure. Actually, sample 3A was prepared by giving the liquor an aeration treatment many times that necessary to oxidize all the sulphide sulphur present and it was found that there is only a slight reduction of the thiosulphate content of the liquor on continued aeration. Hence, the failure of the sulphur loss on heating to decrease in that case.

Because of the important change in the sulphur content and composition occurring upon the heating of black liquor samples, both oxidized and unoxidized samples, it was of interest to determine what decomposition of inorganic salts containing sulphur takes place upon heating them. Solutions of these salts were prepared in distilled water and 5 milliliter portions were dried on filter papers in an air stream. The treated samples of paper were heated at various temperatures for an hour and the total sulphur left in the samples after this treatment was determined by peroxide oxidation and precipitation of the sulphur as barium sulphate. The data are shown in *Table VI*.

These data demonstrate that sodium sulphide decomposes rapidly and to a great extent even at room temperature when exposed to air. Interestingly enough, the sodium thiosulphate also decomposes greatly on heating and this too indicates that merely oxidizing the black liquor to eliminate the sulphide sulphur does not prevent the production of sulphur gases in the furnace from the thiosulphate present. At the temperatures used in these experiments the sulphate and sulphite do not decompose.

Table VII

Sulphur Loss from Oxidized Black Liquor Treated with Sodium Peroxide Before Heating

Liquor Sample	Added Na_2O_2 (grams/liter)	Temperature (° C.)	Sulphur Lost (%)
3	0	230	28
3A	50	230	10
3B	100	230	0

Peroxide Oxidation of Black Liquor

In order to check further these findings, a sample of completely oxidized black liquor that had been standing under air for in excess of eight months was treated with various amounts of sodium peroxide to carry the oxidation further by chemical means before drying the treated samples on filter papers and heating them. *Table VII* gives the data for this.

A test was then made which demonstrated that hydrogen sulphide is evolved upon the destructive distillation of oxidized black liquor or sodium thiosulphate crystals. When these materials were heated to a high temperature in a closed tube and the evolved gases passed into acidified cadmium chloride solution, a considerable release of hydrogen sulphide was indicated.

Since the addition of sodium peroxide is quite effective in decreasing the sulphur loss resulting from the heating of black liquor, the possibility of oxidizing black liquor by addition of chemicals, i.e., sodium or hydrogen peroxide, was indicated. As sodium peroxide is the cheaper source of oxygen and the sodium has some value in sulphate chemical make-up, its effectiveness in preventing sulphur losses was tested by adding it in solution or dry form to samples of unoxidized black liquor. These samples were stored in closed, originally liquid-filled, bottles at 75°C. At various time intervals, the residual sulphide sulphur in the samples was determined by the Borlew-Pascoe method to note the progress of the oxidation and the data are given in *Tables VIII* and *IX*.

When the liquor samples had aged 24 hours at 75°C. after the addition of the sodium peroxide, the thiosulphate and sulphite contents were determined by TAPPI 625 m-44 and the sulphide content by the Borlew-Pascoe method.

Since actually 33.4 grams of sodium peroxide/liter of black liquor oxidized the sodium sulphide from 13.95 to 1.46 grams/liter, this procedure can be said to be a fairly efficient means of oxidizing black liquor. This is particularly true when one keeps in mind that there may be other oxidizable constituents in black liquor besides the sulphide and thiosulphate.

For a mill making 150 tons of kraft pulp per day recovering 200 gpm of weak black liquor, on the basis of the preceding data if sodium peroxide at $0.18 per lb. were used to oxidize most of the sulphide in the black liquor, the cost would be almost $100 per ton of pulp for the chemical oxidation. Obviously, this demonstrates that chemical oxidation of sulphate black liquor with sodium peroxide at present prices is economically impractical since equivalent oxidation of the sulphide sulphur can be obtained at negligible cost by aeration of the black liquor. From the standpoint of sodium content, the addition of this much sodium

Table VIII

Quantities of Sodium Peroxide Used to Oxidize Black Liquor

Sample	Water Added (ml.)	Sodium Peroxide Added/ 200 Ml. of Black Liquor (ml. solution)	(grams)
4	50	0	0
4A	0	50	6.67
4B	25	25	3.33
4C	37.5	12.5	1.67
4D	43.75	6.25	0.83
4E	0	0	15 (dry)
4F	0	0	22 (dry)
4G	0	0	30 (dry)

Table IX

Residual Sodium Sulphur During Peroxide Oxidation

Storage Time (hours)	Grams of Sodium Sulphide/ Liter in Samples 4	4A	4B	4C	4D
0	13.95	....	....	....	....
1	....	1.56	....	11.27	....
3.25	....	1.46	....	10.8	....
9.5	13.95	1.46	6.54	9.17	11.38
22	13.75	1.46	6.54	9.41	11.75

Note: A sample of the original liquor standing for 24 hours at room temperature with twice as much air in the jar as liquor had the sodium sulphide reduced from 13.95 to 12.69 grams per liter.

Table V

Effect of Heat on Sulphur Loss from Black Liquor Samples.

Sample	Treatment	Percentage Sulphur Lost on Heating at Various Temperatures 150° C.	230° C.	450° C.	800° C.
2	Raw	20	42	56	73
2A	Sulphide oxidized	15	29	55	71
3	Partially oxidized	21	28	49	70
3A	Aerated far beyond sulphide oxidation	11	19	53	65

Table VI

Decomposition of Sulphur Compounds Upon Heating

Solution	Chemicals Used	Chemicals Used (grams/liter)	Percentage Sulphur Lost on Heating at Various Temperatures Room *	150° C.	230° C.
A	$Na_2S \cdot 9H_2O$	75			
	plus NaOH	50	..	72	83
B	Na_2SO_3	39.4			
	plus NaOH	50	..	0	0
C	$Na_2S_2O_3 \cdot 5H_2O$	38.8			
	plus NaOH	50	..	18	58
D	$Na_2S \cdot 9H_2O$	75	82	91	88
			71	..	92
E	Na_2SO_3	39.4	0	0	0
F	$Na_2S_2O_3 \cdot 5H_2O$	38.8	0	18	71

* Overnight.

Table X

Effect of Peroxide Oxidation of Black Liquor on Sulphur Compounds and Total Sulphur Content After Heating

Sample	Added Peroxide (g./l.)	Sulphur Components of Black Liquor (grams/liter) Na_2SO_3	$Na_2S_2O_3$	Na_2S	Total Sulphur Lost on Heating to 230°C. (%)
4	0	0.79	13.02	13.75	68
4A	33.4	0.0	14.20	1.46	40
4E	75	0.0	10.42	0.0	18
4F	110	0.0	8.21	0.0	10
4G	150	0.0	5.06	0.0	4

peroxide would be equivalent to a salt cake make-up of almost 1,000 pounds per ton of pulp, obviously an impossible figure for the chemical balance of the mill. The use of hydrogen peroxide would not increase the sodium make-up but is no more practical for use in commercial oxidation of black liquor than sodium peroxide.

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PATENTS

By

FRANK MAKARA

Member New York Bar

Patents are commercial documents. They protect property rights in a patentable invention for 17 years, provided a *full, clear* and *concise* description is given and provided also that the invention is properly claimed. The legal protection is limited to the inventions included in the various claims allowed in the Patent.

The Patent Office will allow claims on an invention if the invention involves mental concept beyond the skill of the art, and has sufficient novelty and some moral utility. The invention therefore must not have been anticipated by the prior art and it must show inventive merit over this prior art. In theory, patents are not to be granted for every infinitesimal advancement over the art. Since what constitutes an invention necessarily appeals to personal reasoning and bias, it becomes obvious that a prolonged prosecution between the proponent of the alleged invention and the Patent Office is quite common.

The prosecution of the application proceeds before a Patent Examiner assigned to the appropriate art until the claims set forth in the application are granted or refused. When claims are rejected, the reasons for the rejection are given and the applicant is given an opportunity to refute the Examiner's argument. In the rejection of claims on prior art, the references constituting the prior art are given by the Examiner and each claim should be applied to the reference or references as the case may be.

Thus if there is no prior art the applicant's chances of obtaining the claims he set forth are good, in the absence of other reasons such as statutory bars of prior use or publication. An applicant who has publicly used his invention a year or more before filing his application is barred by law from obtaining a patent. Similarly, a printed publication of the invention of a year or more prior to application also bars one from obtaining a patent on the published invention.

The question of what constitutes public use or a publication are decided by legal reasoning. Thus a differential gear in an automobile driven in the streets is very likely a public use, even though never visible to the eye of the public. Should a patent be granted to an inventor who fails to assert such public use, thereby knowingly or innocently deceiving the Patent Office, then such a patent will be declared invalid in any suit of infringement if these facts are subsequently brought to the attention of the court.

Patents are essentially business contracts between the inventor and a government. A patent is presumptively valid when issued and in effect the government says it does not know of any grounds for refusing the claims. However, government patent examiners are clerks employed by the government and being human it is but natural that occasionally they fail to search the prior art with sufficient thoroughness. Therefore, prior references that should have been found, are not found, and hence not applied to the alleged invention. It thus may happen that an inventor, believing he has a valid patent, commences an infringement action, only to find that his supposedly new invention had been published years before. Naturally, such an inventor may disparage the work of the Patent Office personnel, but as intimated previously "to err is human," and errors of omission in failing to discover anticipating references will probably always be with us, thereby giving patents only presumptive validity instead of absolute validity.

It therefore behooves a patent owner to speak softly of his invention rather than proclaim revolutionary novelty, lest such novelty may in fact prove to be old, notwithstanding the assertions set forth in his patent.

It follows that in the exploitation of patents, this thought of possible invalidity should be ever present. Thus license agreements that are cordially entered into, wherein the royalty is reasonable, are less likely to be exposed to court action and hence possible invalidation, than patents that may be used as clubs to intimidate or coerce manufacturers to obtain licenses.

From the legal standpoint, inventors are interested in three types of contracts: (1) the Patent; (2) the Employee contract; (3) the License (Royalty) contract. Certain aspects of the patent contract have already been discussed.

As to the Employee Contract it should be noted that with the advance in the general level of education of employes, corporate employes are becoming increasingly patent conscious. Non-research employes are today better informed regarding invention and patent rights and as a result they are becoming increasingly critical of signing employe contracts which require assignment of inventions in addition to their daily hours of labor in return for a daily wage.

Of course, where an employe is hired to invent, then he is expected to assign his inventive concepts since these concepts are what the company contracted for in return for his salary.

Employes tend to resent a requirement calling for assignment of *all* inventions. This resentment is supported by the courts as being inequitable to the employes. As a result the employe contracts require assignment of all inventions only as they relate to the employer's products or more frequently only as they relate to the employer's field of business.

In a similar vein, where formerly the *trailing clause* in such contracts required the employe not to take a job in the same industry if he quit or was fired, now-a-days the prohibition as to the job to be had is more specific and not directed to the industry at large. Furthermore, these trailing clause prohibitions are now usually limited to a time period of one to three years. The trend in the courts is to look with disfavor on a clause in an employe contract that follows the employe until his death and thereby prohibits him from making a living at the kind of work he formerly practiced.

In recent years, employes that are required to assign inventions after having left a job, frequently are compensated for such assignments or in any event, they are recompensed for any expenses that they may have incurred. For example, where a patent must be reissued, many years after an employe had left his job, he will often receive all expenses plus a monetary sum for his cooperation in helping the former employer obtain the reissue patent. This is true, even though the original contract of employment required such subsequent assistance as a precedent condition to obtaining the job.

The employe contract usually has three obligatory clauses requiring the employe-inventor to: (1) disclose his mental concepts, i.e. inventions; (2) assign and thereby transfer his rights in the invention to his employer; and, (3) execute (i.e. sign) all necessary papers during and after his period of employment.

Modern practice relating to employment contracts tends to get away from formal contracts written in legal phrases, the meanings of which are unintellible to the employes. Thus the modern employe contracts read as if they were dictated letters free from all legal terminology.

Such a modern contract will state the employer's line of business and the desire of the employer to make improvements therein, followed by a statement of the payment of a salary to the employe as the consideration for employment. The contract explains the employe's duty to keep records, which become the property of the employer, and will recite his duty to jot down all inventive ideas, whether patentable or not. Also usually included is a statement to the effect that inventions relating to the employer's business made by the employe within a year, or more, after termination of employment shall be the exclusive property of the employer.

Care must be taken that joint inventions as well as the sole inventions of the employe are covered. Thus the employe who makes a joint invention with another employe is also required to assign all his "right, title and interest" in such joint inventions. Such agreements should be worded so as to transfer title to all inventions, applications for patents, and patents themselves, in the United States and in all foreign countries.

The employe contract generally also contains a clause requiring that all information about the employer's business acquired by the employe during his term of employment must be held in confidence.

A *trailing clause*, relating to prohibition of employment for 1 year (or more) in a field of activity closely allied to the one wherein the employe presently works, is sometimes inserted in present day employment contracts. Lastly, a clause binding the employe's "heirs, assigns, executors and administrators" to assign the employe's invention to the employer and his successors and assigns, is inserted. This is for purposes of transfering an invention to the employer upon the death of the inventor. Such a contract appears to adequately safeguard the company's interest.

Inasmuch as up to 50 percent of the inventions in an average company come from the factory, sales and executive personnel, with the other 50 percent being produced by the research staff, it is obvious that practically all employes should be required to sign a contract. Otherwise the employer may obtain only a shop-right to the invention or even no interest at all.

There is a present tendency to reward an inventor over and above that required under his contract. This is in the nature of a gratuity to encourage invention. This gratuity varies from $1 to $100 with $10 being a common amount.

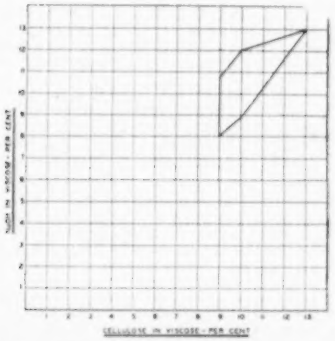
Where there is no written contract the invention may nevertheless belong to the employer, in those cases where the employe solves a specific problem to which he was assigned, even though he was not specifically hired to solve this problem. This is so, even if the problem was solved outside working hours.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

United States

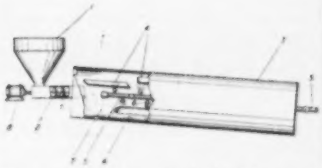
2,491,938 — Method of Producing Viscose Filaments. Paul Henry Schlosser, Reid Logan Mitchell, and Kenneth Russell Gray, Shelton, Wash., assignors to Rayonier Incorporated, Shelton, Wash. Filed October 18, 1944—Issued December 20, 1949.



The improvement in the viscose process which comprises extruding a viscose solution into a coagulating and regenerating aqueous acid spin bath, drawing the resultant filaments from the spin bath at a rate at least equal to the extrusion rate under a tension not over 0.3 gram per denier to form straight cellulose filaments, removing the filaments from the spin bath and collecting them, leaving the collected filaments to relax and to relieve tension thereon while in contact with adhering spin bath for at least ten minutes, said spin bath being of such composition in relation to the amount of cellulose and caustic soda in the viscose that regeneration is completed while the relaxed filaments are in contact with the spin bath, and after regeneration is complete subjecting the straight filaments while wet to high tension stretching under a tension of more than 0.5 gram per denier, whereby the filaments develop the capacity to crinkle.

2,492,047 — Bleaching Wood Pulp. Paul B. K'Burg and Joseph S. Reichert, Niagara Falls, N. Y., assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed March 30, 1946—Issued December 20, 1949.

The process for bleaching wood pulp which comprises forming a mist-like dispersion of an alkaline aqueous peroxide solution in air in an enclosed space and passing through said space in contact with said dispersion a substantially granular, free-flowing, high consistency groundwood pulp initially containing not less than about 60%, and not more than 70% by weight of water,



said granular high consistency pulp being repeatedly elevated and scatteringly dropped during its passage through said space.

2,492,145 — Refining Process for Rosin. Burt L. Hampton, Jacksonville, Fla., assignor, by mesne assignments, to The Glidden Company, Cleveland, Ohio. Filed February 23, 1946—Issued December 27, 1949.

The process for upgrading rosin which comprises treating a substantially metal-free rosin with from 0.01 to 1% of free selenium at a temperature of 200° C. to 300° C. in the presence of a small amount of added acid which is stronger than rosin acids for a time sufficient to decrease the degree of unsaturation without aromatization of substantially more than one ring of the nucleus.

2,492,146 — Process for Refining Polymerized Rosin. Burt L. Hampton, Jacksonville, Fla., assignor, by mesne assignments, to The Glidden Company, Cleveland, Ohio. Filed February 23, 1946—Issued December 27, 1949.

The process for refining polymerized rosin which comprises heating a polymerized rosin with from 0.01 to 1% of free selenium at a temperature of 250° to 350° C. for a time of at least about thirty minutes but insufficient to cause substantial decarboxylation.

2,492,321 — Apparatus for Stripping Bark from Step-by-Step Advanced Sawmill Edgings or Slabs. John R. Roberts, De Valls Bluff, Ark. Filed September 18, 1947—Issued December 27, 1949.

In a slab debarking machine, a frame, a series of independent debarking chisels, each capable of being pressed against the slab independently of the other and arranged in a series disposed transversely with respect to the slab, means for advancing the slab step by step toward the debarking chisels, said means comprising a reciprocating slab carrying carriage, slab gripping devices mounted on said carriage and comprising a series of individually movable inclined teeth, separate means for pressing each of said teeth against the slab for holding said slab on said carriage and for gripping said slab when the carriage advances toward the debarking chisels, while releasing the slab during the return movement of the carriage, clamping devices fixed on the frame, each comprising a number of individually movable inclined teeth, means for pressing the teeth separately against the slab, for clamping said slab and holding it during the return movement of said carriage.

2,492,454—Folding Paper Box. Wilbur G. Anderson, Jr., Grand Rapids, Mich., assignor to American Box Board Company, Grand Rapids, Mich. Filed November 17, 1947—Issued December 27, 1949.

A box structure comprising, a rectangular bottom, vertical front and rear sides foldably connected thereto, a top foldably connected at the upper edge of the rear side, and end members extending from each end of the bottom and from each end of the front and rear sides, said end members connected with said sides overlapping and having interlocking connection with each other, and the end members connected to said bottom extending upwardly and provided at their upper ends with oppositely extended generally horizontal tongues located between the overlapping portions of the end members connected with said front and rear sides of the box.

2,492,510 — Amino-Aldehyde Adhesives. Clarence F. Van Epps, Lockport, N. Y., assignor, by mesne assignments, to Monsanto Chemical Company, St. Louis, Mo. Filed April 24, 1945—Issued December 27, 1949.

An aqueous, liquid, wheat flour-extended adhesive comprising a composition from the group consisting of urea/formaldehyde and melamine/formaldehyde condensation products and sodium bisulphite in concentration of about 1 to 6 per cent based upon the weight of the wheat flour, said adhesive having a pH of between about 2.5 to 6.0.

2,492,552—Acid Treated Starch and Flour Product. George V. Caesar, Staten Island, N. Y., assignor to Stein, Hall & Company, Inc., New York, N. Y. Filed March 16, 1946 — Issued December 27, 1949.

A process of converting dry-milled proteinaceous starch flour into a substantially water-free product which product is water-dispersible and capable of yielding homogeneous aqueous dispersions, which process comprises forming a mixture of said flour with a liquid consisting of glacial acetic acid and heating this mixture at a temperature in the range of 100° to 118° C. until the fixed acetic acid content of the flour as determined by titration with aqueous caustic soda of a pyridine dispersion of the treated flour is in the range of 1 to 8 weight per cent, whereby there is formed a substantially water-free product.

2,492,553—Treatment of Starch Containing Flours with Concentrated Acetic Acid in an Inert Nonaqueous Diluent. George V. Caesar, New York, N. Y., assignor to Stein, Hall & Company, Inc., New York, N. Y. Filed April 27, 1946 — Issued December 27, 1949.

A method of preparing a water dispersible starch flour product whose cooked water dispersions are homogeneous and have downwardly concave log viscosity vs. concentration characteristics at a concentration of about 20 weight per cent solids, which comprises heating starch-containing flour in the presence of a single phase solution of an acid consisting of glacial acetic acid in a non-aqueous inert solvent at the reflux temperature of the reaction mass until the said starch has a fixed acetic acid content in the range of from about 1 to about 8 weight per cent.

2,492,760 — Decorative Protective Coating Composition. Clyde G. Murphy, Raritan Township, Middlesex County, N. J., and John P. Sermattei, Wilmington, Del., assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed August 13, 1949 — Issued December 27, 1949.

A composition for imparting a high gloss to paper which comprises a hard aromatic hydrocarbon soluble resin, having a melting point above 100° C. and a compatible copolymer of 1 to 10 mols of ethylene and one mol of vinyl acetate, the said copolymer being present in amount from 5% to 25% and the hard resin being present in amount from 75% to 95% of the composition.

2,492,886—Method of and Apparatus for Forming Paper End Closures. William F. Punte, Passaic, N. J., assignor to Continental Can Company, Inc., New York, N. Y. Filed June 30, 1944—Issued December 27, 1949.

The method of making paper ends for containers consisting in cutting a disc from a sheet of material, stamping the same to form a body portion of the desired dimensions with a peripheral wall at substantially right angles to said body portion and an outwardly extending flange in a plane substantially parallel with the plane of said body portion, trimming said flange to uniform width, bending said flange to form with said wall an annular channel, then compressing said flange to incline the same inwardly.

In a device for forming paper ends for containers, means for stamping a blank from a sheet of material and shaping the blank to form a body portion with a peripheral wall at an angle to the body portion and an outwardly extending flange, means for trimming said flange to a uniform width and bending the same to form with said wall an annular channel and means for clamping said flange slightly inwardly.

2,492,928 — Cellulose Derivatives. David S. Breslow, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del. Filed December 22, 1948—Issued December 27, 1949.

A cellulose ester of a stabilized rosin carbamic acid.

Canadian

462,004 — Resin Impregnated Pulp Preforms and Process of Catalyzing Same. Raymond R. Harris, Washington, Pennsylvania, U.S.A., assignor to American Cyanamid Company, New York, New York, U.S.A. Filed June 23, 1948—Issued December 27, 1949.

A process for catalyzing polyester resin impregnated pulp preforms comprising applying 0.2 per cent to 4.0 per cent organic peroxide catalyst to the surface of said preform as a solution the per cent catalyst being based on the weight of resin in said preform.

A process for catalyzing a polyester impregnated pulp preform comprising spraying the surfaec of said preform with a solution of acetyl peroxide in a reactive solvent copolymerizable with said polyester resin, said peroxide on the perform being present in an amount from 0.2 per cent to 4.0 per cent based on the amount of resin present in the preform.

462,008—Dispersion of Wood Pulp. Albert C. Nuessle, Landsdowne, Pennsylvania, U.S.A., and William P. Hall, Wilmington, Delaware, U.S.A., assignors to Joseph Bancroft & Sons Co., Lockford, Delaware, U.S.A. Filed February 28, 1947 — Issued December 27, 1949.

The process of dispersing closely packed cellulosic fibres which comprises reacting cellulose pulp with acid free of metal and of organic substituents, in the presence of a non-metallic nitrogen containing organic compound soluble in a solution of the acid utilized and basic in said solution and containing a ratio of carbon to nitrogen of not more than 2 to 1, to form a compound with the cellulose which compound contains nitrogen, the acid and nitrogen containing compound being applied to the pulp in aqueous solution with the amount of solids applied on the pulp ranging from 8 per cent to 110 per cent by weight of the pulp in the dry state, drying the treated pulp, the said reaction being brought about by baking the now dried pulp at a temperature ranging between 250°F. and 400°F. for a time ranging between 180 minutes to 1 minute, and then immersing the baked pulp in hot water, the pH of the treated dried pulp prior to the baking being sufficient to produce a pH of the baked pulp of from 2pH to 7pH as determined by indicator solutions and the concentration of acid and nitrogen containing compound applied to the pulp being sufficient to introduce, into the cellulose-acid-nitrogen complex produced by the baking, an amount of the base element of the acid the effective equivalent of from ½ per cent to 6 per cent phosphorus and an amount of nitrogen from 4 per cent to ¼ per cent by weight.

The process of claim 1 in which the acid used is in the form of ammonium-dihydrogen-phosphate and the nitrogen containing compound is urea.

The process of claim 1 in which the acid is sulphuric and the nitrogen containing compound is urea.

The process of claim 1 in which the nitrogen containing compound is used in an amount in excess of that which will combine with the acid under the conditions of the process.

461,971—Multicolour Stencilling Machine for Webs. Frantisek Jane, Mlada Boleslav, Czechoslovakia. Filed September 23, 1946—Issued December 27, 1949.

Apparatus for printing on web material, such as fabric, paper and like webs and ribbons comprising a printing desk or table, rollers for stretching the material to be printed over said printing desk, a frame carrying a plurality of printing stencils, said stencils being arranged at equal distances from the vertical axis of said frame, means for automatically raising and lowering the frame in timed relation with means for rotating said frame around its vertical axis and stopping the stencils in registry with the surface of the material to be printed on in succession.

FINANCIAL RECORD

PREFERRED STOCKS	Per Share Earnings Calendar Year 1948	Per Share Earnings 12 Mo. to Approx. 9/30/49	Indic. Annual Divid. Rate	Jan. 17 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$46.33*	$38.47*a	$3.75	$101
Armstrong Cork Co. $4.00 Cum. Conv.	46.35*	38.47*a	4.00	112⅜
Celotex Corp. 5% Cum.	26.42c	7.59e	1.00	17⅜
Champion Paper & Fibre $4.50 Cum.	99.97f	37.50j	4.50	98⅜
Container Corp. of Amer. 4% Cum.	105.41	90.43	4.00	102¼
Crown Zellerbach $4.20 Cum.	63.92i	57.02e	4.20	102⅜
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.44	2.50	52⅜
Flintkote Co. $4 Cum.	83.25	61.44	4.00	106
Robert Gair Co., Inc. 6% Cum.	17.08	12.88	1.20	17⅞
International Paper Co. $4 Cum.	263.00	245.41	4.00	104¼
Johns-Manville $3.50 Cum.	209.89	204.89	3.50	124⅝
Kimberly Clark Corp. 4½% Cum.	80.74	70.92	4.50	103½
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	42.20*	4.00	108½
MacAndrews & Forbes 6% Cum.	62.23	64.10	6.00	137½
Mead Corp. 4¼% Cum.	73.46	49.00k	4.25	86¼
Mead Corp. 4% Cum. Conv. 2nd	29.91*	19.93k*	2.00	36¾
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	74.77	4.00	101½
Rayonier Inc. $2 Cum.	16.43	10.76	2.00	31
St. Regis Paper Co. 4.40% 1st A	79.90	34.21	4.40	87¼
Scott Paper Co. $3.40 Cum.	59.06	52.36	3.40	95
U. S. Gypsum Co. 7% Cum.	314.45	281.64	7.00	184¼
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	15.43	2.00	27½
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93h	4.50	108¾

COMMON STOCKS				
APW Products Co.	$0.73	(d)$1.01	—	3⅜
American Writing Paper Corp.	(d)0.15	0.05	—	6⅜
Armstrong Cork Co.	7.54	6.13a	$3.00	51¼
Celotex Corp.	7.21c	1.87e	1.00	20⅛
Certain-Teed Prods. Corp.	4.02	3.09	1.00	16¼
Champion Paper & Fibre	8.70f	3.20j	2.00	34⅛
Congoleum Nairn Co.	5.78	4.92a	2.00	27⅜
Container Corp. of America	10.12	8.50	4.00	39⅜
Crown Zellerbach	7.16i	6.33e	2.00	30⅛
Dixie Cup Co.	6.70	7.00	1.50	37¼
Eastern Corp.	4.76	d0.07	—	15⅛
Flintkote Co.	5.86	4.14	2.50	31½
Robert Gair Co., Inc.	2.67	1.96	0.70	8⅛
Great Northern Paper Co.	4.63	5.21	2.80	41¼
International Paper Co.	8.36	7.80	2.50	35⅜
Johns-Manville Corp.	5.22	5.07	2.50	46⅜
Kimberly Clark Corp.	5.02	4.32	1.65	25⅛
MacAndrews & Forbes Co.	3.68	3.79	2.50	39¼
Marathon Corp.	4.11c	3.29e	1.40	25⅜
Mead Corp.	6.36	3.98k	1.60	16¾
National Container Corp.	2.28	1.04	0.40	8⅛
Paraffine Cos. Inc.	2.45	1.15	1.20	20⅛
Rayonier, Inc.	9.09	5.52	2.00	25¼
Ruberoid Co.	10.72	8.52	3.25	56⅛
St. Regis Paper Co.	2.71	1.02	0.60	8⅜
Scott Paper Co.	4.15	5.38	3.00	67¾
Sutherland Paper Co.	6.02	5.12	2.50	39½
Union Bag & Paper Corp.	9.17	5.36	2.50	27½
United Board & Carton	2.04b	(d)1.61g	—	8⅛
U. S. Gypsum Co.	15.04	13.43	9.00	117½
United Wallpaper	(d)0.10	0.42	—	3⅜
West Virginia Pulp & Paper	11.33c	9.70h	3.00	46¾

(a) 12 months to approximately 6/30/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) 12 months to approximately 10/30/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 11/13/49
(h) 12 months to approximately 7/31/49
(i) 12 months to approximately 9/30/49
(j) 6 months to 9/30/49
(k) 12 months to approximately 10/2/49
(*) Earnings per combined preferred shares.

Western Tablet & Stationery Corp., net earnings for the year just closed were reported January 3 as $727,447, amounting to $4.14 per share. The Kalamazoo Stationery Co. is a wholly-owned subsidiary. Earnings for 1948 were listed at $666,061, or $3.68 per share.

Abitibi Power & Paper Co. purchased and cancelled an additional 30,720 shares of its $1.50 preferred stock, par $20, up to December 25, 1949, the company has advised the Toronto Stock Exchange. This left 1,291,796 preferred shares outstanding.

The last purchase of shares would involve the expenditure of over $675,000, it is calculated.

The Kalamazoo Paper Co. has set a meeting of the stockholders for January 25. The group will meet in the board room of the First National Bank and Trust Co. at 1:30 P.M.

The Allied Paper Mills have summoned stockholders to the annual meeting in the company office at Kalamazoo, Mich. The session is scheduled for 10 A.M., January 25 in the Lake street headquarters.

The Falk Corp. has announced the appointment, effective January 1, of Don K. Lambert as manager of distributor sales. Mr. Lambert has been active in Falk distributor supervision for several years. His new appointment releases him from all other duties and henceforth he will devote his entire time to personally assisting distributor sales organizations in the problems involved in the successful and profitable marketing of Falk products. W. J. Urban will continue in his capacity as manager of coupling sales.

Brown Corp. has declared a dividend of $1.50 per share on preferred stock, payable March 1 to stockholders of record February 14.

West Virginia Retires Stock

NEW YORK—The Irving Trust Co. as retirement agent for the cumulative preferred stock, 4½ percent series, of West Virginia Pulp and Paper Co., has selected 3,081 shares for redemption on February 15, at $106.12½ a share. Payment of redemption monies will be made on presentation of certificates by holders who have been notified of their selection.

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

The H.K. Ferguson Co.
INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

PRICES

The prices below reflect general market quotations at the mill level on the standard grades in which the normal volume of business is being done. Does not include occasional spot offerings.

NEW YORK

Delivered Ports

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mills, Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.50/	—
No. 1 Wrapping Rolls	7.25/	—
Standard Bag	6.00/	—

Tissues— per ream 25x36 (480) 10 lbs.
2500 lbs. or more

Wh. No. 1 Frd.	$1.35	/ —
Wh. No. 1 M. G.	1.50	/ —
Wh. No. 1½	1.35	/ 1.40
Wh. No. 2	1.10	/ 1.20
Kraft Anti-Tar	1.37½/	—
White Anti-Tar	1.75/	—
Shrl. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/$9.45	

Paper Towels— per case of 3750.

Wh. Jr. M'tur'd 9¼x9½	$5.25
Br. Sr. M'tur'l 10x12	3.60
Dr. Jr. M'tur'd 9½x9¾	3.10
Br. Jr. Sgl. fold 10x10¾	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50	
Reg. Jute M.F. Manila, sheets*	13.50/	15.50
Wrapping Manila	8.75/	10.50
Printing Manila	10.00/	11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$72.50/$75.00
Plain Chip	70.00/ —
Blchd. Mla. L-d. Chip*	97.50/ —
White Pat. coated*	115.00/ —
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 ton but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

WORLD WOOD PULP MARKETS

First Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowance		Full freight allowance* On dock Atlantic Ports		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$63.00/$67.50			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.00/ —	125.00/128.00		
Sulphate, Unbl'd North'n		82.50/103.00	82.50/ 85.50	with	
Sulphate, Unbl'd South'n	80.00/ 82.50				
Sulphite Blchd. (S'ftw'd)	118.00 —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

* Ex dock quotations average $5.00 lower.

WASTE PAPER MARKET

Prices to Mills*, (Per Ton) F.o.b. Cars Shipping Point

	New York	Philadelphia	Boston	Chicago
	Jan. 13	Dec. 5	Jan. 13	Jan. 3
No. 1 Mixed Paper	$11.00/12.00	8 —/10.00	$9.00/	$10.00/ —
Boxboard Cuts	11.00/ 12.00	7.00/ 8.00	—/ 5.00	13.00/ —
Mill Wrappers	11.00/ 12.00	10.00/ 11.00	11.00/ —	12.00/ —
No. 1 News	14.00/ 15.00	10.00/ 12.00	11.00/ 12.50	18.00/ —
Over-issue News	15.00/ 16.00	12.00/ 15.00	12.00/ 14.00	21.00/ —
Corrugated Containers	18.00/ 19.00	16.00/ 18.00	17.50/ —	22.00/ —
New Corrugated Cuts	19.00/ 20.00	20.00/ —	19.00/ 21.00	25.00/ —
Double Kraft Ld. Corr. Cuts	34.00/ 35.00	30.00/ 35.00	25.00/ —	40.00/ —
Used Kraft Bags	28.00/ 30.00	25.00/ —	25.00/ 30.00	25.00/ —
No. 1 Brown Kraft Paper	30.00/ 35.00	25.00/ 30.00	25.00/ 30.00	30.00/ —
Super Resorted Br. Kraft	35.00/ 40.00	30.00/ 35.00	35.00/ 40.00	40.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	55.00/ —
New Br. Kraft Cuts	40.00/ 45.00	50.00/ —	45.00/ —	50.00/ —
No. 1 Glwd. Shvs.	25.00/ 30.00	18.00/ 22.00	25.00/ —	23.00/ —
White Newsblanks	55.00/ 60.00	50.00/ 55.00	55.00/ 60.00	45.00/ —
No. 1 Flyleaf Shvs.	30.00/ 35.00	—/ 30.00	35.00/ 45.00	40.00/ —
No. 1 Soft Wht. Shvs.	80.00/ 85.00	65.00/ 70.00	65.00/ 70.00	60.00/ —
Super Soft Wht. Shvs.	85.00/ 90.00	70.00/ 75.00	85.00/ 95.00	70.00/ —
Hd. Wht. Shvs.	85.00/ 90.00	80.00/ 85.00	90.00/100.00	80.00/ —
Hd. Wht. Env. Cuts	105.00/115.00	90.00/ 95.00	105.00/ —	90.00/ —
New Manila Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	35.00/ 40.00	20.00/ 25.00	35.00/ —	40.00/ —
Manila Tab Cards	65.00/ 70.00	65.00/ 70.00	75.00/ 80.00	65.00/ —
No. 1 Mixed Ledger	35.00/ 37.50	30.00/ 35.00	34.00/ 37.50	40.00/ —
White Ledger	45.00/ 50.00	45.00/ 50.00	40.00/ 50.00	50.00/ —
Mixed Books & Mags.	13.00/ 15.00	10.00/ 12.00	12.00/ —	15.00/ —
No. 1 Rep'd Hvy. Books & Mags.	25.00/ 30.00	20.00/ —	23.00/ 25.00	26.00/ —

* Includes brokers' fee.

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
100% Rag. Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.35
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
Watermarked	$16.55/$17.50
Plain	15.60/ 15.95

Ledgers

	4 Ctns.
	per cwt.
Watermarked	$18.05/$18.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$19.75/$20.90
No. 2	19.25/ 19.65
No. 3	17.75/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.40/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/ $10.75
Unbleached Muslin	9.75/ 10.50
Light Silestas	6.50/ 7.50
White Black Blue Overalls	5.50/ 6.25
Blue Overalls	4.50/ 5.00
Fancy Shirt	4.50/ 5.00
Percales	5.50/ 6.00
Light Prints	5.50/ 6.00
No. 1 Washables	2.75/ 3.00
Bleachable Khaki	4.50/ 5.00
Unbleachable Khaki	3.75/ 4.50
Cottonades	4.00/ 4.75
Lt. Flannelettes	6.25/ 7.25
Men's Corduroy	3.50/ 4.25
Women's Corduroy	3.00/ 3.75
Canton Flannels, Blchd.	8.50/ 9.00
Underwear Cutters, Blchd.	10.75/ 11.25
Underwear Cutters, Unblchd.	10.50/ 11.00

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
No. 1 Whites, Repacked	$4.25/ $4.75
No. 1 Whites, Miscllaneous	3.00/ 3.50
No. 2 Whites, Repacked	3.00/ 3.25
No. 2 Whites, Miscellaneous	2.75/ 3.00
Cotton Pants & Overalls	2.50/ 2.75
Thirds and Blues, Repacked	2.50/ 2.75
No. 1 Roofing Rags	1.55/ 1.65
No. 2 Roofing Rags	1.45/ 1.55
No. 3 Roofing Rags	1.40/ 1.50
No. 4 Brussels & brd. Bck'd crpts.	1.25/ 1.40
Roofing Bagging	1.25/ 1.35

New Foreign Cotton Cuttings

(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	$2.75/ $3.00
New Mixed Cuttings	2.75/ 3.00
Light Silesias	6.50/ 7.00
Light Flannelettes	5.50/ 6.00
New White Cuttings	10.00/ 10.50
New Unbleached Cuttings	10.00/ 10.50

Fancy Shirt Cuttings	4.50/	4.75
Light Prints	4.25/	4.50
Bleachable Khaki, No. 1	4.25/	4.50
Unbl. Khaki, No. 1	4.00/	4.25

Old Foreign Rags

(Prices to Mills, f.o.b. Dock, N. Y.)

	Per 100 lbs.	
No. 1 White Cottons	$6.50/	$7.00
No. 2 White Cottons	5.50/	6.00
No. 3 White Cottons	4.00	4.50
No. 4 White Cottons	3.00/	3.50
Extra Light Prints	4.50/	5.00
Old Light Prints	4.00/	4.25
Med. Light Prints	2.50/	2.75
Dutch Blue Cottons	3.25/	3.50
Checks and Blues	2.75/	3.00
Linsey Garments	2.10/	2.40
Dark Cottons, European	2.00/	2.10
Dark Cottons, Egyptian	1.85/	2.00
Old Shopperies	1.75/	1.85
New Shopperies	2.00/	2.25

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny	$6.50/	$7.00
Domestic Gunny, No. 1	6.50/	7.00
Heavy Wool Tares	6.00/	6.50
Foreign Manila Rope	4.50/	4.75
Domestic Manila Rope	5.00/	5.25
Jute Strings	5.50/	6.00
No. 1 Sisal Strings	3.00/	4.50
Mixed Strings	1.15/	1.30
Heavy Baling Bagging	7.50/	8.00
Paper Mill Bagging	4.00/	4.25
No. 1 Scrap Burlap		
Foreign	5.75/	—
Domestic	6.00/	—
Austr. Wool Pouches	—/	6.00
New Burlap Cuttings	6.00/	7.00

MATERIALS

Casein

Argentine market strengthened by drought conditions. Price firms. Current prices on processed acid precipitated domestic grades 22½ to 24 cents, imported grades 18¼/19½ cents, ex dock, N. Y. car lots.

Caustic Soda

Demand strong. Stocks adequate for prompt shipment. Prices unchanged. Solid caustic is reported at $3.05 per cwt.; flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots, at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand strong. Supply of domestic and imported ample. Domestic airfloated filled quoted at $10 per ton, water washed $11.00, car lots, f.o.b. mines. Coating clay is $16 to $30. Imported clays repriced to 15.2 and $28.35 short tons, export warehouse.

Chlorine

Supply tightened by strike at one plant. No early easing seen. Demand strong. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b. works.

Rosin

Not much free stock available. Demand gains and prices strengthen. Gum rosin in drums, per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G,H,I,K, $6.38, wood rosin, per 100 pounds, car lots, f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Demand steady. Supply good. Seventy percent gum and pale grades, tank cars, $5.47 to $5.63 f.o.b. southern shipping point.

Salt Cake

Demand from kraft mills heavier. Supply adequate. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Demand—supply in balances. Current prices, car lots per 100 pounds; light ash in bulk, $1.00; in paper bags, $1.25.

Starch, Corn

Demand good. Supply adequate. Prices guaranteed against rises to Jan. 15. Pearl grade currently quoted at $4.87 per 100 pounds; powdered starch at $4.98 per 100 pounds; white corn dextrine at $6.14 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Heavy paper demand. Idaho high grade in easier though restricted supply. Quoted at $5.25 cwt., car lots, f.o.b. shipping point. Maine production in liberal supply. Quoted currently at $5.00 cwt. car lots; shipments of Feb. 1 and thereafter, $4.75 cwt., f.o.b. Maine.

Sulphate of Alumina

Demand steady. Prices firm. Supply good. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.75 per 100 pounds in bags, car lots, at works.

Sulfur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export prices f.o.b. Gulf ports is $22.00 per long ton.

Talc

Demand continues far ahead of supply. Prices steady. Domestic grades are currently quoted at $23 to $28 per ton in 50-lb. paper sacks, car lots, f.o.b. mills; Canadian at $35 and up per ton.

Tapioca Flour

Supply liberal. Fair demand. Convertible dextrine grades range from $8.75/$9.00 cwt; with lower grades ranging down to $6.50 cwt., Atlantic and Gulf ports. Siamese low grades find ready kraft and corrugated market. Priced at $4.00 to $5.50 cwt. on dock, N. Y.

Titanium Dioxide

Stocks ample. Demand strong. Prices firm. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50 pound bags, f.o.b. plant, actual freight allowed.

IMPORTS

As a result of the following comments, we are reinstating the Imports. They will be run weekly as here-to-fore:

James T. Flannery Co. — As an importer of rags, bagging, etc., we were very much interested in your weekly listings of imports because we found it to be the most compact and correct listing of imports anywhere in our line and this certainly saved us a considerable amount of time in checking the information elsewhere.

McLaurin-Jones Co. — Our company is very much interested in the figures on paper and paper products.

American Paper and Pulp Association — Upon discussing this situation with the secretaries of the Divisional Ass'ns., the consensus was that the data collected, as published, formed a useful basis for observing the trend of imports. May I take this occasion to compliment you on the high quality of your column "Trends."

E. de Vries Co.—I think this was an important service which you offered to the American paper market.

Oliver Fibre Co.—We are very much interested in your weekly listing of imports and we would like to request its continuance particularly with respect to pulp and fiber boards.

Butler American Paper Div., Butler Co.—We would like to see a continuation of such listings.

P. L. Thomas & Co. — As paper dealers particularly on imported items, we are interested in knowing what is being imported.

Carl Schleicher & Schuell Co.—We are missing this information very much.

Jay Madden Corp. — This section is one of the most interesting parts of your publication and we do hope you are not discontinuing same.

China-American Paper & Pulp Co., Inc.—We are interested in your publication if Imports of Pulp and Paper and we think it is proper that you include these reports in your weekly.

H. Reeve Angel & Co., Inc. — We are interested in Paper Imports.

IMPORTS AT NEW YORK

Week Ending January 14

Newsprint

N. Y. Journal American, Markland, Liverpool, N.S., 610 rolls.

N. Y. Herald Tribune, Markland, Liverpool, N.S., 1439 rolls.

N. Y. World Telegram, Markland, Liverpool, 724 rolls.

Brooklyn Eagle, Markland, Liverpool, N.S., 612 rolls.

Brooklyn Eagle Press, Inc., Markland, Liverpool, N.S., 25 rolls.

Trade Union Service, Markland, Liverpool, N.S., 120 rolls.

Advance Pattern, Inc., Markland, Liverpool, N.S., 31 rolls.

Washington Post, (Alexandria, Va.), Markland, Liverpool, 2379 rolls.

Alexandria Gazette, (Alexandria, Va.), Markland, Liverpool, 45 rolls.

Sun Arlington, (Alexandria, Va.), Markland, Liverpool, N.S., 28 rolls.

Wall Street Journal, Cornerbrook, Cornerbrook, 144 rolls.

N. Y. World Telegram, Cornerbrook, Cornerbrook, 661 rolls.

Hearst Enterprises, Inc., Cornerbrook, Cornerbrook, 341 rolls.

N. Y. Times Co., Cornerbrook, Cornerbrook, 755 rolls.

Nowy Swiat Publishing Co., Cornerbrook, Cornerbrook, 33 rolls.

Castle & Overton, Inc., Cornerbrook, Cornerbrook, 261 rolls.

Surface Coated Paper

Gevaert Co. of America, Amsteldyk, Antwerp, 4 cs.

Gevaert Co. of America, Black Falcon, Antwerp, 10 cs. (Unfinished).

Gevaert Co. of America, Edam, Antwerp, 21 cs.

Baryt Paper

W. Reimerdes, American Harvester, Bremen, 7 cs.

Rice Paper

Gillespie & Co., Laura Maersk, Keelung, 13 cs.

Filter Paper

S. H. Pomerance, American Harvester, London, 1 cs.

Raw Base Paper

Lep Transport Inc., American Harvester, London, 99 rolls.

Silk Cloth Paper

J. H. Falkenberg, Laura Maersk, Yokohama, 2 cs.

Wrapping Paper

Jay Madden Corp., Mormacyork, Helsingfors, 3441 rolls.

Parchment

Meadows Wye & Co., Queen Mary, Southampton, 1 cs.

Wallpaper

J. H. Frankenberg, Laura Maersk, Shimidzu, 5 bls.

Rags, Baggings, etc.

Royal Manufacturing Co., Amsteldyk, Antwerp, 57 bls. cotton waste.

Chase National Bank, Grigorios III, Naples, 199 bls. dark cotton rags.

(———), Paolina, Genoa, 181 bls. hemp rags.

E. J. Keller Co. Inc., Paolina, Genoa, 259 bls. paperstock.

Goldman Trading Co., Paolina, Genoa, 4 bls. paperstock.

E. J. Keller Co., Inc., Paolina, Naples, 77 bls. dark cottons.

J. P. Fleissig, Paolina, Messina, 680 bls. dark cotton rags.

E. J. Keller Co. Inc., Black Falcon, Antwerp, 100 bls. old waste bagging.

Guaranty Trust Co., Black Falcon, Antwerp, 152 bls. old rags.

A. Siegle Corp., Black Falcon, Antwerp, 138 bls. cotton waste pickers.

Royal Manufacturing Co., Black Falcon, Antwerp, 68 bls. cotton waste.

National City Bank, American Harvester, London, 146 bls. jute bagging.

Trust Co. of North America, American Harvester, London, 57 bls. scrap bagging.

Cowa Co., Brazil, Rio de Janeiro, 154 bls. cotton waste.

Cowa Co., Campero, Recife, 99 bls. cotton waste.

M. O. Schimmel, Campero, Recife, 251 bls. cotton waste.

New England Waste Co., Campero, Recife, 90 bls. cotton waste.

Seafood Importers, Inc., Trollafoss, Reykjavik, 38 bdls. waste kraft paper, 30 bdls. waste manila boards.

E. J. Keller Co. Inc., Raphael Semmes, Antwerp, 47 bls. old bagging.

National Bank of Detroit, Mormacyork, Copenhagen, 33 bls. scrap bagging.

M. Sigal & Son, Mormacyork, Copenhagen, 16 bls. jute rags.

Lush Cotton Products Co., Hoegh Silverstar, Bombay, 200 bls. cotton waste.

Royal Manufacturing Co., Hoegh Silverstar, Bombay, 100 bls. cotton waste.

C. Kutz, Hoegh Silverstar, Bombay, 150 bls. cotton waste.

Green Textile Associates, Hoegh Silverstar, Bombay, 300 bls. cotton waste.

O'Brien Products, Inc., Hoegh Silverstar, Bombay, 100 bls. cotton waste.

Camden Fibre Mills, Hoegh Silverstar, Bombay, 100 bls. cotton waste.

Southern Waste Co., Hoegh Silverstar, Bombay, 100 bls. cotton waste.

American Cotton Products Co., Hoegh Silverstar, Bombay, 50 bls. cotton waste.

Miller Waste Mills, Hoegh Silverstar, Bombay, 100 bls. cotton waste.

M. O. Schimmel, Hoegh Silverstar, Bombay, 135 bls. cotton waste.

Brandwein Mazur Co., Hoegh Silverstar, Bombay, 150 bls. cotton waste.

E. J. Keller Co. Inc., Algonquin Victory, Antwerp, 49 bls. old bagging.

A. de Vries Trading Corp., Algonquin Victory, Antwerp, 128 bls. scrap bagging.

(———), Algonquin Victory, Antwerp, 90 bls. flaxwaste.

Darmstadt Scott & Courtney, Algonquin Victory, Antwerp, 5 bls. flaxwaste.

K. Butterworth & Co., Inc., Algonquin Victory, Antwerp, 80 bls. old bagging.

E. J. Keller Co. Inc., Mount Davis, Marseilles, 47 bls. waste old bagging.

Old Rope, etc.

R. L. Pritchard, Magdapur, Calcutta, 560 bls. rope cuttings.

Wood Pulp Boards

Jay Madden Corp., Mormacyork, Helsingfors, 229 rolls (solid white).

IMPORTS AT NEWARK

Week Ending January 14

Pagel Horton & Co. Inc., Bernhard Ingelsson, Sikea, 3258 bls. unbleached strong sulphite pulp.

Cellulose Sales Co., Bernhard Ingelsson, Soraker, 2100 bls. dry sulphite pulp.

Elof Hansson, Inc., Bernhard Ingelsson, Westervik, 5334 bls. woodpulp.

Cellulose Sales Co., Bernhard Ingelsson, Hernosand, 2400 bls. sulphite pulp.

Cellulose Sales Co., Bernhard Ingelsson, Ortviken, 2406 bls. dry sulphite pulp, 600 bls. kraft sulphate pulp.

Bulkley Dunton Co., Bernhard Ingelsson, Sundsvall, 2742 rolls sulphite pulp.

IMPORTS AT BOSTON

Week Ending January 14

New England Waste Co., Amsteldyk, Rotterdam, 120 bls. cotton waste.

E. Butterworth & Co., Inc., Algonquin Victory, Antwerp, 52 bls. cotton waste.

J. P. Fleissig, Mount Davis, Naples, 171 bls. dark cottons.

IMPORTS AT PHILADELPHIA

Week Ending January 14

E. J. Lang, American Harvester, London, 91 bls. jute bagging.

Madden Reeve Angel & Co. Inc., Mormacyork, Helsingfors, 833 rolls newsprint.

Pulp Sales Corp., Mormacyork, Helsingfors, 508 bls. white dry mechanically ground woodpulp.

Colonial Lumber Co., Mormacyork, Helsingfors, 390 bls. coated board.

IMPORTS AT BALTIMORE

Week Ending January 14

J. S. Connor, Black Falcon, Antwerp, 564 bls. jute waste bagging.

S. Shapiro & Son, American Harvester, London, 77 bls. cotton rags.

National City Bank, Exporter, Bari, 262 bls. dark cottons.

Chemical Bank Trust Co., Exporter, Bari, 183 bls. cotton rags.

IMPORTS AT NORFOLK

Week Ending January 14

A. de Vries Trading Corp., Black Falcon, Antwerp, 140 bls. scrap bagging.

E. J. Keller Co. Inc., Black Falcon, Antwerp, 21 bls. old waste bagging.

E. Butterworth & Co. Inc., Black Falcon, Antwerp, 91 bls. old bagging.

(———), Black Falcon, Antwerp, 203 bls. jute waste.

A. de Vries Trading Corp., Algonquin Victory, 64 bls. bagging.

A. de Vries Trading Corp., Excalibur, Genoa, 152 bls. scrap bagging.

E. J. Keller Co. Inc., Excalibur, Genoa, 103 bls. jute rags.

IMPORTS AT WILMINGTON

Week Ending January 14

Delaware Pulp Co., Gulfport, Sheet Harbor, Nova Scotia, 8,988 bls. wet mechanical woodpulp.

IMPORTS AT PORTLAND

Week Ending January 14

Gottesman & Co., Inc., S.S. Albebarran, Sandviken, Sweden, 6,000 bls. unbleached kraft pulp.

CONVERTERS

Expect Dobeckmun To Set Record

NEW YORK — Dobeckmun Co. converters of cellophane, foil, and transparent film, appears certain to set a new peacetime sales record of about $13.7 million for 1949, 16% ahead of the previous peacetime record of $11,750,000 established in 1947, and 26% above prewar 1941. A further increase is expected in 1950, and this may easily surpass the alltime peak of $14,816,000 reached in 1944.

Madison Paper To Represent Marcalus

NEW YORK—N. Marcalus, president, Marcalus Manufacturing Co., Inc., announces the appointment of the Madison Paper Corp., New York City, as Metropolitan sales representative for the Lincoln, N. H., plant of the Marcalus Co. This plant manufactures fine papers, sulphite bond, writing, ledger, mimeo, duplicator, manifold, envelope and other sulphite and ground wood specialties.

Appleford Paper Products Expands

OTTAWA — It is reported that the Appleford Paper Products, Ltd., a subsidiary of Kalamazoo Vegetable Parchment Co., has completed and occupied its new plant in the key industrial center of East Hamilton, Ont. The plant, which has a Canadian National Railway siding, is two stories, of steel and brick, and 66,000 sq. ft., on 7 acres purchased in 1946. The move was from an in-city plant. Payroll is being pushed toward 250 workers which is substantially more than in the earlier plant. It is understood that the company intends to add to its waxed paper lines several new products which will be disclosed at a later date.

Milwaukee Lace Names Gockley

MILWAUKEE, Wis.—Milwaukee Lace Paper Co. has appointed John C. Gockley as their representative in the New England territory to succeed Howard S. Patton who recently passed away. Mr. Gockley assumed his new duties on January 1. Mr. Gockley's address is 92 Marion street, Apt. B3, Brookline, Mass.

Dobeckmun Holds Party

CLEVELAND, Ohio — Approximately 500 employee members of the Dobeckmun Co.'s Five and Up Club and members of their families attended the group's sixth annual banquet and dance in Hotel Cleveland ballroom on January 14. W. D. Sweeny, executive vice-president, will be the principal speaker.

Sherman Advances Three

NEWTON UPPER FALLS, Mass.—Sherman Paper Products has announced the promotion of John Herrick from the post of sales manager of the specialties division to general sales manager. John Feaver, regional packaging

engineer, has been advanced to the position of sales manager of the industrial division. Arthur Lytle, formerly assistant sales manager of the specialties division, has succeeded Mr. Herrick as sales manager of that division.

Regal to Add Lines at Pulaski

PULASKI, N. Y. — Extensive operations are under way at the Regal Paper Co. plant with preparations to engage in the manufacture of added lines, it was revealed by D. W. Benson, who stated that he hopes to have employment for about 50 people within the next several months.

Andre Paper Box Expands

SAN FRANCISCO—The Andre Paper Box Co., owned and founded by Noble Andre 13 years ago with a capital of $350, began construction of a $250,000 ultra modern box factory in San Leandro on December 19. The one-story concrete and steel plant will cover 35,000 sq. ft. and is expected to be completed in March.

Paperboard Container For Grapefruit

WASHINGTON, D. C.—Development of a new paperboard type of container, replacing wire-bound wooden boxes for packaging grapefruit, is reported by the Research and Marketing Administration, Agriculture Department. Researchers claim the new container will save growers 15 cents a box on their shipments.

Acme Paper & Twine at New Address

CHICAGO—Acme Paper and Twine Co. moved to their new location at 329 N. Racine Avenue on January 1. Their former location was 2368 N. Clybourn with warehouse at 415 S. Washtenaw. This larger warehouse has railroad siding and modern office space.

American Envelope Consolidation

NEW YORK—The American Envelope Mfg. Co., and the American Envelope & Paper Co., announced their consolidation on January 3. The businesses will be continued and conducted as American Envelope Mfg. Corp., 22 Howard street, New York 13, N. Y.

MISCELLANEOUS

Development of Interstate Streams

WASHINGTON, D. C.—The pattern of development of interstate streams which interstate water agencies are evolving should form the basis of a new national water policy, Senator Hendrickson, Rep., New Jersey, said in the Senate last week.

Calling attention to what he charged were plans of the Interior Department to "extend its activities in river development programs into the East," the Senator reported that the issue had been the subject of correspondence between Assistant Secretary of Interior Warne, and the Interstate Commission on the Delaware River Basin. The latter, referred to usually as "Incodel" represents New York, New Jersey, Pennsylvania and Delaware. In its letter to Assistant Secretary Warne, the agency called attention to its operations in the East, and those of similar bodies in the Ohio, Potomac, Hudson and Connecticut river watersheds, and expressed the view that these were already doing an effective job in their respective areas.

Among other projects which might come in the future, Warne had said in a press interview, were Federal projects in New England, "which are still in the talk stage." He mentioned, however, that his department contemplates that eventually there will be river developments corresponding to reclamation projects in the West, but intended primarily to insure a better distribution of available river supplies in the East.

It was this latter to which Senator Hendrickson and the river agency mentioned, took exception.

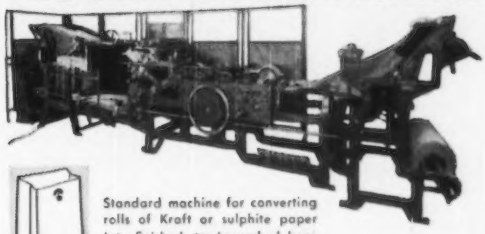
Hydro-Electric Development

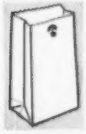
BOSTON — The Legislative Commission on Power and Light visited several hydro-electric developments in the western part of the State preliminary to conferences scheduled with engineers to discuss further possible development along the Merrimack and Connecticut rivers.

POTDEVIN

self-opening-square

GROCERY BAG MACHINES





Standard machine for converting rolls of Kraft or sulphite paper into finished, trade-marked bags. Models for producing the popular grocery bag range from ½ lb. to 35 lb. inclusive. Potdevin Aniline Printing Press connected to Bag Machines will turn out printed bags in one operation from the unprinted roll.

High speeds (from 275 to 450 bags per minute) quick change-over from size to size, and a minimum of adjusting, make POTDEVIN machines the favorite in bag plants all over the world.

Consult our engineers on any problem. No obligation. Literature on request.

POTDEVIN MACHINE CO.

1223 38th Street, Brooklyn 18, N. Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling.

POTDEVIN

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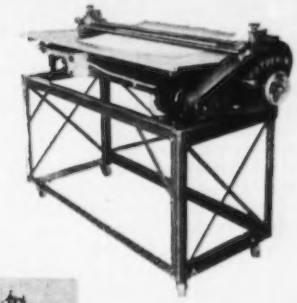
GLUE MILL-ROLL HEADERS



OIL INK PRESS

Heavy duty 39 or 46 inch POTDEVIN GLUERS handle your header labels efficiently and speedily. Patented regulator applies a controlled film of glue—for strong, all-over adhesion to insure a tightly sealed wrapper. Ball-bearing casters permit moving the POTDEVIN to the rolls being "headed".

MULTI-WALL TUBER

Write for full particulars on POTDEVIN Gluers and other equipment for the Paper Trade.

POTDEVIN MACHINE CO.

1223 38th Street, Brooklyn 18, N.Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling.

POTDEVIN

Members looked over the Holyoke Dam project of the Holyoke Water Power Co. and the Turner Falls development of the Western Massachusetts Electric Co.

The visit is a climax of a detailed study of all existing data compiled from Federal, State and independent reports and is designed to discover the relations of these sites to the over-all practice and actuality of possible hydro-electric development in this state.

Seek U. S. Tariff Reductions

OTTAWA.—Although no official disclosure has been made of the articles involved and these are not expected to be made known before next April, it is understood that Canada is soon presenting a new lengthy list of articles to the United States upon which she would like to negotiate lower tariffs when the next round of such negotiations are undertaken next September. The understanding is that concentration in these negotiations will be to make it easier for Canadian made articles to get into the United States. This possibly will affect the paper industry.

The object behind some of these efforts to reduce United States tariff barriers is to increase Canadian exports across the border to bring a better balance of trade. The current deficit in favor of the United States has forced the Canadian Government to impose import restrictions as well as take other measures to get around the acute shortage of American dollars.

Speculation suggests that much Canadian goods crossing into the United States without tariff interferences are, in reality, raw materials but the tariff walls get higher as attempts are made to export more manufactured articles from Canada. For example, it is pointed out that pulpwood and newsprint move freely from Canadian sources to the United States but this easy movement across the border does not apply to fine paper. In this branch of paper production, Canadian manufacturers have made extensive progress and can handle a wide variety of orders so that expansion of such sales in the United States market would be most beneficial for the whole fine paper industry.

Change in Export Regulations

OTTAWA—In order to prevent Canada being used as a "back door" to evade the export regulations of other nations the following group has been added to the Schedule of Goods under Export Control.

Group 9. *Goods Originating outside of Canada.*

All goods originating outside Canada when tendered for export in the same condition as when imported without further processing or manufacturing in Canada, with the exception of:

(a) Goods in transit in bond on a through bill of lading originating outside Canada, clearly indicating the ultimate destination of the goods to be a third country.

(b) Goods consigned to the United States of America as the country of ultimate destination and not specifically listed in this Schedule.

The general permit No. SPL 1597 exempting non-essential goods, also applies to this group.

Canadian Carloadings

OTTAWA. — The Canadian Government announces cars of revenue freight loaded on the railways during the week ending December 31, 1949, declined to 3,328 cars of woodpulp and paper as compared with 4,289 in the preceding week or 3,420 in the similar week of the previous year.

The Eastern Division accounted for 2,923 cars of woodpulp and paper in the week ended December 31 as against 3,643 in the preceding week and 2,951 in the similar week of previous year, with the Western Division showing 405 for the week ended December 31 compared with 646 in previous week or 469 in same week of preceding year.

The cumulative total of such carloadings of woodpulp and paper during the 52 weeks of 1949 ending December 31 declined to 204,458 as compared with 220,129 in the year 1948, with the Eastern Division accounting for 178,497 in 1949 as against 191,071 in 1948 and the Western Division for 25,961 compared with 29,058 in previous year.

Canadian Employment

OTTAWA.—The Labor Department estimates that 261,000 persons were looking for work across Canada December 22, 1949, or about 5.2 percent of the total labor force. The declining timber and pulpwood markets having prevented the logging industry from taking up the winter slack in employment as it has in other years.

N. Y. U. Offers Printing Course

NEW YORK—"Ink and Paper in the Printing Process" is the subject of a fifteen week advanced seminar, beginning February 7, offered by New York University to better acquaint those in the printing ink, paper and printing fields with the types of inks and paper used in various printing methods.

Damaged Freight Claims

By EDWIN CHESTER HASTINGS

Carloads of paper are given to the rail carriers with the expectation the commodity will reach the destination in the same condition as when the shipper loaded the lading at the origin point. Careful handling by the carrier is fully justified for merchandise whose ownership belongs to the carrier's customer. For this service, the carrier charges various rates. Those rates are based on classification and weight of the product, and are known as the "price to haul." While the rate includes the use of the carrier's equipment, it also includes "Safety" to the customer's product rolling over the highway of steel ribbons. Damages are a costly feature to the carrier, they try every means to avert injury in transit, yet there are "weak-spots" needing correction.

Heavy rolls of paper, if handled roughly in transit, are in danger of collapsed centers, torn jackets, jagged edges, and cores out of balance. The carriers do not permit "rough-handling" by crews. But an evil spot hard to check is an interchange point where cars are "slapped-around" by yard crews. Deep in a large junction rail yard where cars are cut out of through trains and switched to a track for movement in another train. In the darkness of night, far from the yardmaster's office, cars are cut loose from the yard engine and travel alone to join other cars on the same track. Many times the engineer shoves the car too fast. When the car strikes the others the impact changes the shape of the lading. At this point, if the consignee could inspect the lading, he would find a variety of rolls, some round and several flat.

Carriers can locate where cars are treated roughly, every railroad has car inspectors at each junction point. Their job does not include opening the car to inspect lading, but they do check 200 places on each car when received and when the car leaves the yard. A broken pin or knuckle on a coupler result from cars banged together. But it takes many bangs to do the job, the lading, of course, can't take that type of punishment and suffers. Regardless of the care used, the customer still receives damaged lading. What does he then do? The usual routine is to call the agent of the railroad and have some one inspect the damage.

The "marks" are made on the freight bill and witnessed. The claim is filed on the "standard form" with the carrier. The damaged rolls are reprocessed or sold to a paper converter at salvage prices, those unfit are scrapped. After an investigation, the carrier pays the claim for the loss or rejects on the basis of lack of proof.

It may be of interest to note that all claims among rail carriers are governed by the Freight Claim Rules of the Association of American Railroads. The following information is based on the recent issue (1949) of these rules published by the Freight Claim Division. To quote from the book (231 pages), the goal is "standardize" in the Principles and Practices for the Investigation and Disposition of Freight Claims as cited in the purposes—"so far as lawfully may be accomplished":

(a) To obtain uniformity on the part of all carriers and uniform treatment of all claimants in the disposition of claims of like nature.

(b) To secure and preserve harmonious relationships in freight claim

matters among carriers, and between carriers and their patrons.

(c) To effect and maintain a prompt and efficient service to the public in connection with the investigation and disposition of freight claims.

With whom should the claim be filed? The "form" covering loss, damage, injury or delay will not be honored unless filed in *writing* with the receiving or delivering carrier within the time limit (two years). A report, notation on the freight bill, or document of a witness do not comply with claim filing requirements. If the lading moves partly by rail and motor, filing with the latter does not satisfy the railroad bill of lading provision, unless both carriers provide through movement of the property. Claims are sometimes presented for an uncertain amount such as "more or less." This is a waste of time and the carrier will not act or pay until the claimant states in writing a specified amount and shows how it is calculated.

Only one claim is needed and should be filed with one of the carriers previously cited. If two or more are filed on the same shipment, that is, separately with the other carriers involved in the haul, the claimant may innocently place himself as one attempting to get more than he deserves. Each claim is investigated and all carriers are contacted. Often they find the shipper and the consignee have filed separate claims on the same shipment. This not only delays action but the carrier will demand further substantiation on the part of each claimant of his right with respect to such claim. The original freight bill is always required with the claim, and sometimes, in addition, the bill of lading. If these can't be produced, the carrier will demand suitable indemnity from the claimant.

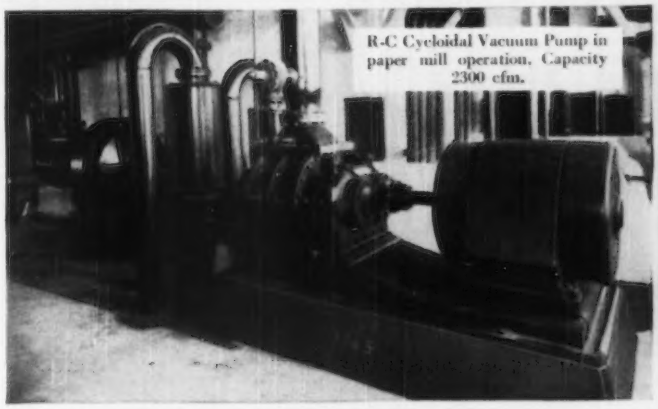
In the investigation, the carrier may require the original invoice or a copy certified as correct over the signature of an authorized representative of the claimant. If a copy is made, deductions and trade discounts are to be shown. The reason for this is, the amount of the claim must agree with invoice prices actually paid. Trouble may be expected if the claim exceeds the base value of the property at destination prices. Actual salvage allowances are the actual amounts realized from the sale of the damaged property. As concrete proof, one should be able to present sales sheets that are properly signed and marked "paid." The claimant's loss does not include any prospective profits, brokerage, overhead expense, per cent above invoice value, or other similar items. When necessary, in order to establish the full actual loss caused by the carriers, they can require the original account of sales showing the dates of sales and the amounts realized on the damaged and undamaged products, together with any deductions, allowances and commissions.

What measure of damages can be claimed? Unless there is declared or agreed value, the responsibility of the carrier is based on the destination value. This is wholesale, jobbing, or auction prices. Retail value (price with a profit) if used on the claim will be rejected. Recognized market quotations are used as a factor in destination value. Where these are not available at the destination, those nearby are used.

A joint cash appraisal by the carrier and consignee can be based on the bona fide invoice price, plus proportionate freight charges if paid and not included in the invoice price, and duty or tax if paid and not refundable, will be accepted as the reasonable destination value.

The use of sales value of undamaged packages may be used where the consignee accepts damaged packages and disposes of them to the best advantage, the measure of damage will be the difference between the sales value of the undamaged packages and the proceeds of sale of the damaged products.

An allowance or reduction in the invoice or selling price, made by the shipper to the consignee, do not necessarily indicate loss or damage to the property for which the carrier is responsible. The claim based on this type of information is subject to full investigation, and if accepted with restrictions, the adjustment will be less than requested.



R-C Cycloidal Vacuum Pump in paper mill operation. Capacity 2300 cfm.

MAY WE ASSIST YOU, SIR?

If you're on a merry-go-round about vacuum pumps, ask ROOTS-CONNERSVILLE to settle things for you.

Our wide line of Cycloidal Vacuum Pumps, built especially for paper mills, offers a choice of standard sizes, all with these important advantages in economy and dependability:

High volumetric efficiencies—accurately maintained clearances, effectively sealed by water, insure high efficiencies; air being handled can be dry, or contain vapors or liquids.

Low friction losses—due to no contact between impellers or impellers and casings.

Higher speeds—permitting direct connection to standard motors, saving first cost, space and weight.

Flexibility—to meet varying vacuum requirements; suction automatically created to overcome resistance in system.

Durability and dependability—simplified design and construction for long-time, attention-free operation.

Tell us your requirements and we'll help find the answer closely fitted to your specific needs.

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BLOWER BUILDERS SINCE 1854
ONE OF THE DRESSER INDUSTRIES

PROTECT or PAY.

You have no other choice!

Corrosion costs industry over $6,000,000,000 annually. No business escapes its effects. Attacks by acids, alkalis, salts, gases and atmospheric conditions cause untold damage that often is overlooked until too late.

Check the danger points in your plant — piping, machinery, walls and all other exposed areas. Most conventional coatings fail when corrosion threatens. That's why Amercoat is designed to give *extra protection* against surface failure. Highly resistant to a wide variety of chemicals, brines, fumes, weathering, abrasion, it is available in a number of formulas, *each designed to meet specific conditions.*

Be sure your plant and equipment are safe from corrosion damage. Protect now with Amercoat.

AMERCOAT CORPORATION
A Division of
American Pipe and Construction Co.
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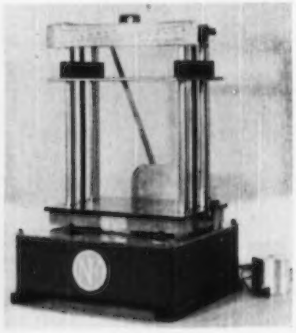
EQUIPMENT

Compression Testing Machine

A new compression testing machine of 750-lb. capacity is designed to make standard crush tests of boxboard (TAPPI t472 m-48); also to make flexure and compression tests of a variety of small containers, drums, and other parts and articles. Specimen is placed on lower weighing platen and the upper platen driven down upon it by two screws rotating in fixed nuts.



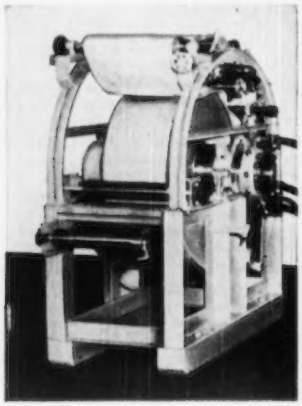
Four rigid guide columns keep the driving platen parallel throughout its travel. The amount of crush is measured in pounds by a simple lever and pendulum system. (Two ranges are available: 0 to 75 lbs. and 0 to 750 lbs.) Adding a ballast weight to pendulum pin bring the higher scale into operation. An actuator arm connected to the pendulum is designed to move a "lazy hand" or maximum load indicator across an open linear, eye-level scale. Upper platen travel is controlled in direction by an up-off-down snap drum switch, and rate of travel regulated from 0 to 2½ ins. per minute by a Graham variable speed drive. Power is provided by a 1/12 hp 110-v. A.C. motor which is protected from overload and over-travel by limit switches. For details and prices, write to National Forge and Ordnance Co., Irvine, Warren County, Pa., for Brochure 492-G.

Bark Press

The new bark press now in production is designed to reduce the moisture content of wet bark to 50 percent or less. In this state, the bark is said to be readily combustible as fuel. The press utilizes the defibrator screw feed principle. Wet bark, containing 85 percent water is fed through a hopper to a tapered throat where it is compressed by a screw. The water which is squeezed out drains through numerous small holes in the throat. Further compression and water removal takes place as the bark passes through an outlet pipe with adjustable opening. Processing capacity of installations now in operation is approximately 5 tons per hour (on a bone-dry basis); and power consumption at this capacity is rated at 40 to 50 hp. For details and prices, write to American Defibrator, Inc., Chrysler Building, New York 17, N. Y.

Pilot Plant Filter

The Pilot Plant Filter is designed to handle any continuous filtering operation in small production, experimental or temporary processes. Permits use of either scraper or string discharge which can be interchanged readily. Includes the submergence type washing mechanism which can be used for complete chemical washing, for compression drying or can be disconnected entirely. Drum of small filter is 3 feet OD, 1 foot wide, approx. 10 sq. feet area. Material: type 316 stainless steel. Filter cloth is FEON nylon or other material as required. For prices and details write to Filtration Engineers, Inc., 155 Oraton Street, Newark 4, N. J.



SUPPLIES

Kem-Ban, Protective Paint

Kem-Ban is described as a rust-inhibitive, protective-coating compound designed to meet the stringent demands of myriad maintenance-coating and production-finishing applications throughout the manufacturing, chemical processing, paper, textile and other industries. Based on a specially selected copolymer as the binders, and incorporating certain key rubber derivatives as plasticizers, the formulation is said to provide effective rust-inhibiting action and excellent resistance to acids, alkalies, chemical fumes, moisture, salts and alcohols. Applied by spray, dip or brush methods, the paint dries in from 20 to 30 minutes, it is stated. Depending upon film thickness desired, the material can be re-

duced for application from 20 to 50 percent with ordinary turpentines. Also reported to adhere tenaciously to all ferrous and nonferrous metals and alloys, galvanized surfaces, clad metals, and even polished and stainless steels, and to be equally applicable to wood, linoleum and composition flooring. May be utilized in product-painting operations either as a primer or as a final protective finish coat. Available in clears, and in brown, black, dark green, white, chrome yellow and tile red. For prices and details write to Ace Laboratories, 1614-18 Coutant Avenue, Lakewood 7, Ohio.

Dry Flo

Dry Flo is described as a water-hating (hydrophobic) derivative of corn starch. It is finely divided powder of silky texture which is free-flowing to the extent that, in many ways, it behaves like a liquid. Presence of the hydrophobic groups makes the product extremely difficult to wet with water under ordinary conditions. It can be wet with water if a wetting agent is used or if the dry material is first wetted with alcohol or other water-miscible solvents. Although the moisture content of Dry-Flo will vary slightly according to the relative humidity of the surrounding atmosphere, the dry product does not wet when added to water but remains dry and floats on the surface, it is stated. Potential applications listed by the manufacturer include rubber dusting, flatting agent in lacquers, detackifying agent for rubber articles formed by the dip method, anti-halation powder for the back of photographic films, prevention of stocking of viscous materials to container walls, lubricating agent, and cosmetic powders. For details and prices, write to National Starch Products, Inc., 270 Madison Avenue, New York, N. Y.

LITERATURE

Alloy Steel Products Co., Inc., Linden, N. J. Technical Information Bulletin No. 3, "Aloyco Corrosion-Resistant Jacketed Valves." Complete with cutaway drawings, dimensional charts, and materials specifications.

Association of American Railroads, Freight Loading and Container Section, 59 East Van Buren St., Chicago 5, Ill. Booklet, illustrated, 100 pp. "Rules for the Receipt, Handling, Stowing, Bracing and Delivery of Less-Than-Carload Freight." Guide to shippers, agents and supervisory forces in connection with the acceptance, handling, loading and storage of LCL freight.

American Hoist & Derrick Co., St. Paul 1, Minn. Catalog No. 600L-8, "American 25 Ton Dieselectric Locomotive Crane, Model 825 DE." Sales copy with illustrations and specifications.

National Assn. of Mfrs., Brochure, 46 pp., "Tips on Trade With Marshall Plan Countries." Service to the public and to American businessmen. Discusses how to go about getting orders financed with ECA funds, the future of ECA-financed business and forms of ECA assistance available to small business. Explains the Marshall Plan's basic features, what it has accomplished and how the ERP countries determine their needs.

Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa. Booklet, B-4213. Discusses the safety features of new standardized control centers. Includes sections on how to plan them, dimensions and weights of starter and other interchangeable units, also reference tables for selection of starter sizes. Booklet, illustrated, B-4319. Describes construction features of the complete Westinghouse line of instrument transformers.

Allis-Chalmers Mfg. Co., S. 70th St., Milwaukee, Wis. Bulletin, 61B6382A, "Dry-Type Transformers." Describes the versatile and flexible transformer available in a wide range of sizes suitable for duty right at the load center; also carries electrical and mechanical data.

Beaver Pipe Tools, Inc., Dana Avenue, Warren, Ohio. Revised Catalog No. 50. Complete information on the entire line of pipe, tools, machines, power drives and threading oil, including color illustrations.

Chicago Assn. of Commerce & Industry, Chicago, Ill. Directory, "Federal Government Purchasing Offices." Concerned with sales opportunities in the various government departments and agencies. Write to Chicago QM Purchasing Office, 1819 West Pershing Road, Chicago 9, Ill.

Department of Commerce, Small Business Div., Chicago, Ill. Directory, "Government Procurement Manual." Explains the what, where, and how of procurement activities.

Davis Engineering Corp., 1064 E. Grand St., Elizabeth 4, N. J. Bulletin No. 190, "The Everclean Paracoil White Water Heater." Sales and technical copy on the automatic and self cleaning heater specially designed for the paper industry. Complete with cutaway and sectional drawings and installation layout.

Food & Agriculture Organization of the United Nations, Washington, D. C. Book, "1949 Yearbook of Forest Products Statistics." The third yearbook of forest products statistics to be published by FAO. Prepared by the Div. of Forestry and Forest Products as part of its regular statistical services. Contains information for the year 1948, and revised data for 1947, reported by over 100 countries and territories in reply to a standard questionnaire distributed to all governments. The statistical tables are preceded by a summary of conclusions which gives some salient features of the 1948 world situation. It is to be noted that world and regional totals figuring in this summary include estimates for nonreporting countries, whereas the world and regional totals in the statistical tables are comparable totals for 1947 and 1948 for the reporting countries actually listed. Price $2.50.

Field Research Div., Paper Cup & Container Institute, 551 Fifth Ave., New York 17, N. Y. Booklet, "Single Service News." Reprints of popular and technical magazine articles supporting the use of paper cups and containers in schools, cafeterias, etc.

The B. F. Goodrich Co., Akron, Ohio. Catalog 9020, "B. F. Goodrich Linings and Rubber-Lined Tanks." Features tables showing acids which can be safely and economically handled by rubber linings, also storage tank dimensions ranging from those which hold 225 gallons to 30,000. Catalog 9780, "B. F. Goodrich Rubber-Lined Pipe, Fittings, Valves." Gives design, construction, service recommendations, and lists many uses, specifications and data.

Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore. Form 1135, "Hyster 20 Lift Truck." Contains model views, action photographs and descriptive text covering the new 2,000 pound capacity lift truck.

National Adhesives Div., National Starch Products, Inc., 270 Madison Ave., New York 16, N. Y. Booklets, "Successful Case Sealing," "How to Handle Adhesives for Transparent Films," "Successful Bottle Labeling," and "How to Prepare and Use Glues, Pastes and Gums."

Letter to Editor

Editors Comment:—Any information that can be supplied to our Danish inquirer will be gratefully appreciated. Please reply directly with a copy to PAPER TRADE JOURNAL, or write to us and we will forward.

Dear Mr. Perry:

Re: *Aluminia Cores for Newsprint Reels.*

In the PAPER TRADE JOURNAL of December 9th, 1948, we read your article on the above subject with the greatest interest, especially your information relating to the most common kinds of damage caused to newsprint-reels in transit. You were dealing simultaneously with some of the means that may be adopted to minimize the causes, and mention that some American mills are supplying reels with metal cores.

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
December 3	100.2	December 4	95.4
December 10	100.5	December 11	98.2
December 17	98.4	December 18	95.9
December 24	88.0	December 25	74.3
December 31 (Revised)	72.4	January 1, 1948	73.3
January 7, 1950	95.8	January 8, 1949	95.3

COMPARATIVE MONTHLY SUMMARIES

1948						Year 1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	78.6
						July	72.8
						Aug.	‡88.0
						Sept.	‡90.3
						Oct.	‡98.0
						Nov.	‡98.4
						Dec.	‡90.4
						Year Avg.	185.6

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	90.4	87.8	88.1	89.7	101.4	104.9	96.7	‡88.6
Year Average	90.4	87.8	88.1	89.4	100.1	104.3	96.2	‡86.6

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
December 3	93	December 4	93
December 10	96	December 11	96
December 17	92	December 18	96
December 24	92	December 25	87
December 31	53	January 1, 1949	46
January 7, 1950	74	January 8, 1949	79

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75	64	86	87	94	93	83	83

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

We constitute the sole purveyors of newsprint to the Danish Press, and although our consumption is only small from an American point of view we have had to contend with quite a good deal of trouble, including also, crushed cores. Once in a while we have considered the idea of using metal cores, but have repeatedly retreated before it, owing partly, to some resistance from the Scandinavian mills to go in for this change and partly on account of the rather high return freight and the risk of damage to the cores by repeated use.

It would, therefore, be a great help to us, if you could possibly see your way to answer a few questions or be kind enough to advise us as to the best possible source of information:

(1) Which kind of alloy is used in the cores, how are they constructed, and is it possible to obtain a sample or drawing?

(2) Which American mills are using these cores?

(3) Which method of fitting these cores on the rotation presses is practiced?

During the last 15 years we have done everything possible to train our workmen and the crews of the special ships carrying our newsprint to handle the paper with particular care. Through these efforts we have succeeded in effecting a very marked lowering in the percentage of damage, but we imagine it possible to do better still. To this end we are contemplating various improvements—inter alia to our warehouses. To let you have some idea of what we have done so far we are sending you a booklet, which we distribute to workmen, ships crews, etc.

Unfortunately it is printed in Swedish, but an English edition is being compiled.

We trust to be favored with your replies to the above mentioned queries, and we should certainly be pleased to furnish you, in return, with any such information at our disposal, that might be of interest to you.

Yours faithfully,
DEN DANSKE PRESSES
FAELLESINDKOBS-FORENING
Radhuspladsen 55
Kobenhavn V, Denmark.

Editor—The signatures were written in longhand and not possible to cipher.

Landing Strips for Maritimes

AMHERST, N. S.: Construction of landing strips throughout wooded areas of the Maritimes to facilitate greater efficiency in fire fighting is the next aim of the Maritime Section of the Canadian Society of Forest Engineers. This resolution was passed at the annual meeting of the group which ended here last week.

Long advocating extension of forest motor roads, the group is now ready to devote its energies to this new endeavour. Constant pressure from forestry groups has succeeded in giving Nova Scotia the finest network of forest roads in Canada while the program is going rapidly ahead in neighboring New Brunswick.

Kaare Smith, representing the Pejepscot Paper Co., Saint Martin's, N. B., urged a continuation of the drive toward more and better forest roads.

Reduced Rail Rates To Trade Fair

TORONTO, Ont.—The Canadian Passenger Association, in recognition of the importance of the Canadian International Trade Fair to the business and economic life of Canada, is cooperating with the Canadian Government by reducing railway fares for participants in the 1950 Fair, which will be held in Toronto from May 29 to June 9. It has announced that rail travel rates for the Trade Fair will be fare-and-a-half from any point of origin in Canada to the Trade Fair and return.

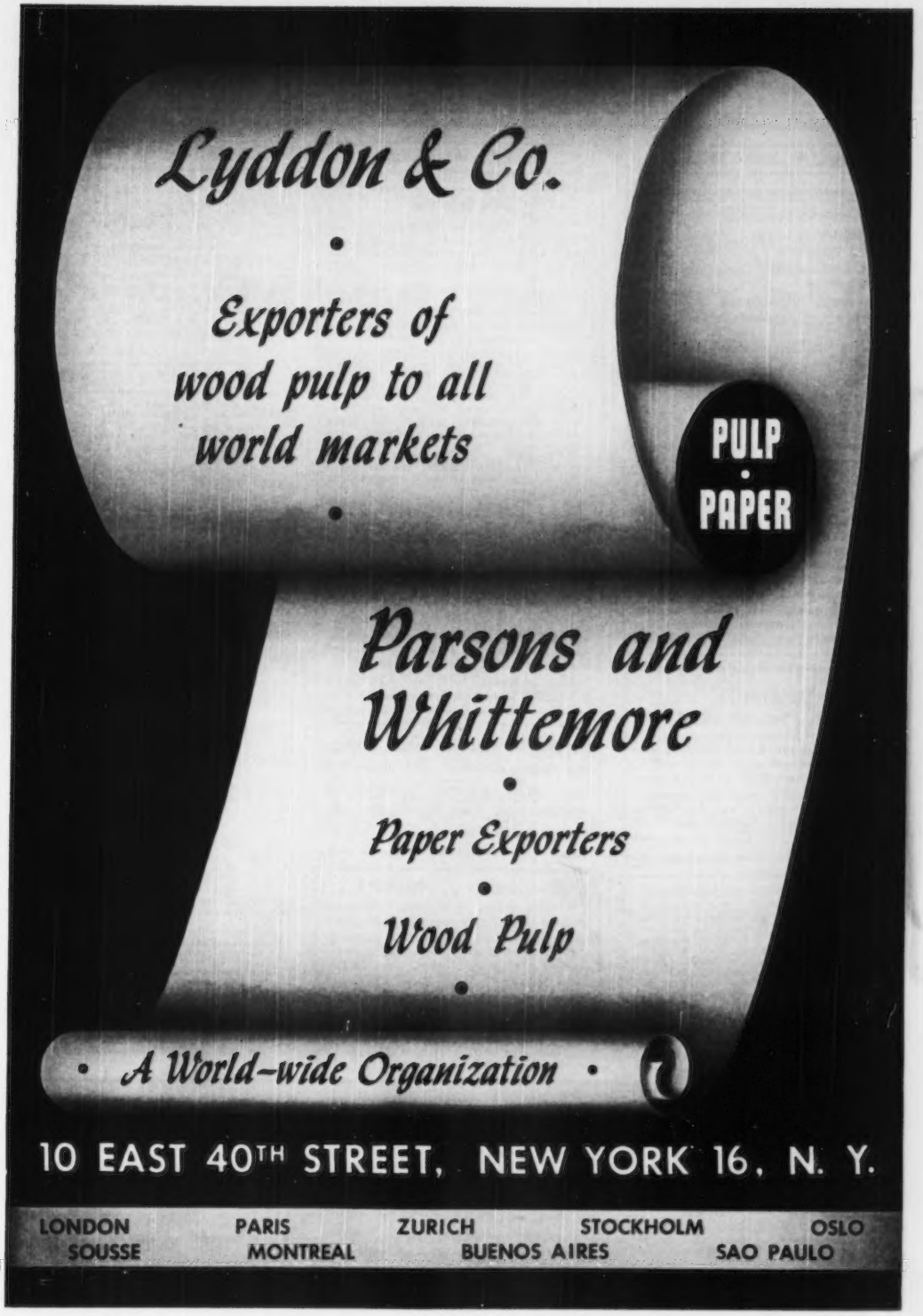
Exhibitors and their personnel from abroad travelling to the Trade Fair will also benefit by this special rate, starting from their point of entry into Canada to the Fair, and return to the same point. All applications for this reduced rate must be made to the Administrator, Canadian International Trade Fair, Exhibition Park, Toronto, who will forward the necessary credentials for presentation to the ticket agent.

Canadian Pulp and Paper Statistics

OTTAWA—The principal statistics for the pulp and paper industry of Canada for 1948 showed the following, with figures for the preceding year being given in brackets as comparison, the Canadian Government announces:

	CANADA	Quebec	Ontario	British Columbia	*Other Provinces
Establishments	117	50	46	9	12
	(115)	(50)	(45)	(8)	(12)
Pulp Mills	29	11	9	4	5
	(29)	(11)	(8)	(4)	(6)
Pulp and Paper Mills	62	32	18	5	7
	(59)	(32)	(18)	(3)	(6)
Paper Mills	26	7	19	...	-
	(27)	(7)	(19)	(1)	...
Total Employees	51,924	23,894	17,674	5,036	5,320
	149,946)	123,675)	(116,927)	(4,526)	(4,918)
Salaries and Wages	$151,662,761	$69,147,780	$51,776,145	$15,747,555	$14,991,281
	($129,477,995)	($60,623,167)	($44,235,111)	($12,414,932)	($12,204,785)
Fuel Used	$41,365,865	$17,960,225	$14,004,903	$4,619,354	$4,781,183
	($31,833,560)	($12,364,184)	($11,026,343)	($3,797,218)	($4,645,815)
Electricity Purchased	$22,477,446	$15,046,389	$4,767,137	$190,346	$2,473,574
	($23,608,836)	($16,339,701)	($4,678,175)	($123,842)	($2,467,118)
Power Employed	2,513,115	1,324,273	702,395	213,037	273,410
	(2,364,649)	(1,282,556)	(672,275)	(157,907)	(251,911)

* Nova Scotia, New Brunswick and Manitoba.


Lyddon & Co.
Exporters of wood pulp to all world markets
PULP
PAPER
Parsons and Whittemore
Paper Exporters
Wood Pulp
A World-wide Organization
10 EAST 40TH STREET, NEW YORK 16, N. Y.
LONDON
PARIS
ZURICH
STOCKHOLM
OSLO
SOUSSE
MONTREAL
BUENOS AIRES
SAO PAULO

CLEARING HOUSE

HELP WANTED

WANTED

MACHINE TENDERS
BACK TENDERS
BEATER ENGINEER
TOUR BOSS

Thoroughly experienced in manufacturing of quality folding box board.

Steady job, one machine mill, located Northern New Jersey.

In reply, state age, experience and full details.

Address Box 50-33, Paper Trade Journal. J-26

CHEMICAL ENGINEER OR CHEMIST: A large company producing clays for paper has an opening on its Technical Staff for a Chemical Engineer or Chemist for research and technical sales work. Applicant must have at least five years of diversified experience in paper laboratory. Coating experience desirable but not essential. Give complete information in first letter including education, experience, references and salary requirements. Location Georgia. Excellent opportunity. Address Box 50-21 care Paper Trade Journal. J-19

CHEMIST

Our Paperboard Mill, specializing in the manufacture of folding grades, is seeking an experienced chemist to assist in controlling formulae and improving our quality. An exceptional opportunity is offered to the right man. In your reply give complete background of experience and your desired compensation. Address Box 50-5, care Paper Trade Journal. J-19

SALARIED POSITIONS $2,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (40 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.

TF

HELP WANTED

MEN WANTED
Positions Open

We can place managers, general superintendents and superintendents for paper and box board mills; night superintendent paper converting.

Maintenance engineers, master mechanics, plant engineers, and chief draftsmen. These positions will pay from $5,000 to $9,000 year.

Mechanical engineer and machine designer to build paper and pulp mill machinery.

Chemists and chemical engineers for paper mills, one with experience in application of wax on paper; chemist for technical service and development work with chemical manufacturing concern; A-1 color man to take charge of beaters and color matching.

Graduate mechanical engineer for paper converting plant, salary up to $9,000; boss machine tender Fourdrinier machines; Cylinder machine foreman board and roofing felt; night foreman Cylinder machine board mill; machine tenders, back tenders and beater engineers.

We invite correspondence (confidential) with executives seeking positions and with employers seeking new personnel.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass. J-19

Paper Mill Superintendent Wanted

for one machine paper board mill located in Northern New Jersey area. Manufacturing white patent coated, bleached manila, and other quality folding box board grades.

Good opportunity for proper man. Reply Box #50-37 care Paper Trade Journal. J-26

Established dyestuff concern seeking aggressive salesman well connected in the paper mill trade. Write stating qualifications. Box No. 50-12, care Paper Trade Journal. J-19

ELECTRICAL ENGINEER

Fox River Valley (Wis.) paper mill wants electrical engineer experienced in all phases of maintenance and layout. Give complete personal and business history in letter of application. Write Box 49-622, care Paper Trade Journal. J-19

LARGE PAPER MACHINERY MANUFACTURER interested in securing services of erecting supervisor for shop and field work. In reply state age and experience. Address Box 50 9 care Paper Trade Journal. J-19

HELP WANTED

ASSISTANT TO GENERAL SUPERINTENDENT — Four machine tissue mill, Fox River Valley, Wisconsin. Machine experience required. Address Box 49-614 care Paper Trade Journal. J-19

EXPERIENCED PAPER SALESMAN WANTED — Specialty paper manufacturer with well rounded line of products has an opening in Mid-Western territory. Good opportunity for experienced salesman. Applicants must furnish references and qualification. Address Box 50 22 care Paper Trade Journal. J-26

SITUATIONS WANTED

FOREMAN of small varied bag specialty plant, long experience, technical background, complete know how, desires change with heavy responsibilities. Address Box 49-615 care Paper Trade Journal. J-19

PRODUCTION MANAGER or General Superintendent. Wide experience in the manufacture of Cylinder Products including specialties where quality counts. Can duplicate or develop new grades on a successful commercial basis. Address Box 50-2 care Paper Trade Journal. J-19

PLANT MANAGER—Board and Paper Conversion; employed; seeks opportunity in company needing cost-minded executive with proven production record and excellent labor relations history. Address Box 50-8 care Paper Trade Journal. J-26

SALESMAN, university education, broad background in paper industry, seeking connection with Chicago headquarters. Fully capable. Gentile. Address Box 50-19 care Paper Trade Journal. J-26

CHIEF OR PLANT ENGINEER with 20 years experience in Supervision, Production, Research, Maintenance, Construction, Power Plants and Development and methods of manufacture. Capable of taking charge of all plant engineering and maintenance. Registered professional engineer with B.M.E. Degree. Desires change. Address Box 50-36 care Paper Trade Journal. J-26

COLUMBIA School of Business Graduate, MBA ENGINEER, Several years Kraft, Sulphite Mill, Design experience. Trained to assist in the solution of problems in cost analysis, market research, statistics, quality control, finance and economics. Available shortly. Address Box 50-30 care Paper Trade Journal. J-19

FOR SALE

FOR SALE—Two each Moore & White Cutters, including back rolls and lay boy—48", 62" and 106". One each Smith & Winchester Undercut Trimmers—56" and 92". One 44" 9 roll Holyoke Calender Stack and one 56" Eck & Soehne Calender Stack. Address Box 50-29 care Paper Trade Journal. F-9

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

FOR SALE

1—Paper Converting Machine Co. 4-Web Dispenser Type Napkin Folder. Production 100M per Hour.

1—Paper Converting Machine Co. ¼ fold, 2 web napkin folder with embossing attachment, Extra Embossing rolls.

CAMERON SLITTERS

1—40" Model 4-B.

1—42" Type 26, Model 2A.

1—42" Type 40-T.

1—50" and 1—60" Type 28, Model 3D.

1—52" Type 8-S.

1—62" and 1—65" Type 9.

1—62" Type 10-S.

1—42" and 1—62" Universal Type 6.

1—52" Type 6—Model 1A.

1—82" Johnstone, Fourteen slitter and rewinder, New.

1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.

1—40" Kidder Late Type Model SL Slitter & Rewinder. Reconditioned and guaranteed.

1—40" Langston Type A Shear Cut Slitter & Rewinder.

1—40" Model C Fales. Knife set-ups for ¾", 7⅛" and 20 Adjustable Cutters. 5 HP AC Motor equipment.

1—32" Johnstone Type 12 Slitter & Rewinder. New. For narrow slitting down to ¼".

Power Paper Cutters: 5—Seybold—1—40" & 1—50" 10Z, 54" Holyoke, 1—74" 20th Century 84" 2-H. 5—Oswego—34", 44", 50", 57" and 68". White—1—40". 2 Acme 32" and 42". Sheridan—1—65". 2—S&W Undercut—63" and 92".

3—Potdevin Flat & Square Bag Machines. Models 292, 294 and 391.

1—Nasko High Speed Flat & Square Bag Machine. Complete and in A-1 condition. Large range of formers and gears.

1—45" German Dornbusch Embossing machine with two sets of embossing rolls.

1—50" Hudson-Sharp Model 8E Embosser. With two sets of embossing rolls.

3—Model 30 Potdevin Sos Grocery Bag Machines. Range 1 to 10 lbs., inclusive.

1—62" Dillon Duplex Rotary Sheet Cutter. With Slitting attachment and 24-Roll Double-Deck Backstands.

1—72" Hamblet Single Rotary Sheet Cutter with Slitting Attachment.

1—82" Hamblet Single Rotary Sheet Cutter with Slitting Attachment, Erie Automatic Layboy and 24-roll Double-deck Backstands.

2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".

1—41" wide 3-color roll to roll Former Standard Type Wolverine aniline printing press. Complete with Reeves Drive and A.C. motor equipment, practically new.

2—#1 Dilts Hydrafiners. With flexible couplings for direct connection to motors.

2—Bird Screens. One 3A and one 2A.

2—12" x 12" Beloit Triplex Plunger Stock Pumps.

5—Ten Plate Packer Screens.

1—Knapp, Model K.W. Napkin Wrapping Machine.

Refiners—1—Weiner, 1—Shartle.

GIBBS-BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y.

J-19

FOR SALE

CURRENT OFFERINGS

58" Finley Single Knife Sheeter.
82" Hamblet Sheeter with Layboy.
No. 9 Cameron Slitter.
3-color Rotary Web Press, 60" cyl.
55" 9-roll Super Calendering Machine.
Model 145 Economy heavy duty Baler.
32", 38", 40" and 44" Power Cutters.
NEW Back-Stands, made to special order.
Motors—from fractional to 30 H.P.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18.
(Plant at Stamford, Conn.)

TF

PAPER MILL FOR SALE

Located on Hudson River in New York State. Cylinder machine with Toilet Tissue Converting plant, water power and steam plant. Good operating condition. Replies to Box 50-24, c/o Paper Trade Journal. J-26

FOR SALE—SLITTERS

1—Cameron—Type #9-5—52"
1—Lankston—Type AA—72"
Excellent Condition

THE DELTA COMPANY, INC.
333 West 24th Place
Chicago 16, Illinois

J-19

FOR SALE

Microjet Coater, practically new
Mfg. by J. Waldron Corp.
Will coat 40" web
Can be seen—Ready for shipment

Address Box 50-26 care Paper Trade Journal. J-19

FOR SALE—One—5 ft. x 8 ft. Impco Vacuum Sludge Filter, new in 1941. Frank H. Davis Company, 175 Richdale Avenue, Cambridge, Massachusetts. J-19

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—106" Beloit 3 sets press roll stations; 106"—2 bar slitter; 7 pairs mill stands with controls for 72" diam. rolls with 78" & 106" shafts; 74" Knowlton cut-off knife; 49" x 66" and 46" x 62" Miehle Printers and die cutters; 26" x 38" x 41" Thomson platen die cutters; Write for listings on over 90 paper converting and paper box-making machines available. Address Box 50-35 care Paper Trade Journal. J-19

FOR SALE—One Kidder, 3 color, 36 inch wide Rotary Press, 30 inch cylinder with roll unwind and rewind. Address Box 50-28 care Paper Trade Journal. J-19

WANTED

WANTED

Heavy duty, double cut-off mill sheeter sixty inch face. Address Box 50-14, care Paper Trade Journal. J-26

WANTED

WANTED
GOOD USED

Standard waxing machine 36", 48" wide or wider. Address Box #50-27 care Paper Trade Journal. J-19

WANTED

Complete small single cylinder paper machine. Address Box 50-7, care Paper Trade Journal. J-26

WANTED—SOLVENT WASTES
Of All Kinds
Will *Redistill* or *Purchase*
Also Surplus

Chemicals—Dyes—Pigments—Oils, etc.
By-Products, Residues, Equipment

CHEMICAL SERVICE CORPORATION
86-04 Beaver St., New York 5, N. Y.

J-19

WANTED—Brightwood Box Machine. Address Box 50-17 care Paper Trade Journal.

PAPER MANUFACTURER desire to purchase or invest in converting business of standard paper products. Address Box 50-16 care Paper Trade Journal. TF

WANTED—Used duplex rotary sheet cutter. Must be in good condition, with Erie Layboy attached. Suitable to cut 72"-76" paper, not over 80". State make, age, model and condition. Address Box 50-11 care Paper Trade Journal. J-19

WANTED—W & P Shredders, Evaporator, Gederators and Boilers, Slitters, Cutters Hydraulic presses, Sheridan Presses, Dryers. Address Box 50-18 care Paper Trade Journal. TF

WANTED—Jumbo rolls cut to specifications for roll toilet tissue (various grades). Submit samples and prices for carload quantities. Address Box 49-620 care Paper Trade Journal.

WANTED—48" diameter cast iron dryers 128" to 134" face. Address Box 50-34 care Paper Trade Journal. F-2

WANTED—Two 14' Rotary Digesters. Must be in first class condition, stating lowest price and where same can be inspected. Address Box 50-32 care Paper Trade Journal. J-19

WANTED—64 inch Seybold Trimmer with flexible hold-down bar. Would consider 56 inch. Address Box 50-31 care Paper Trade Journal. J-19

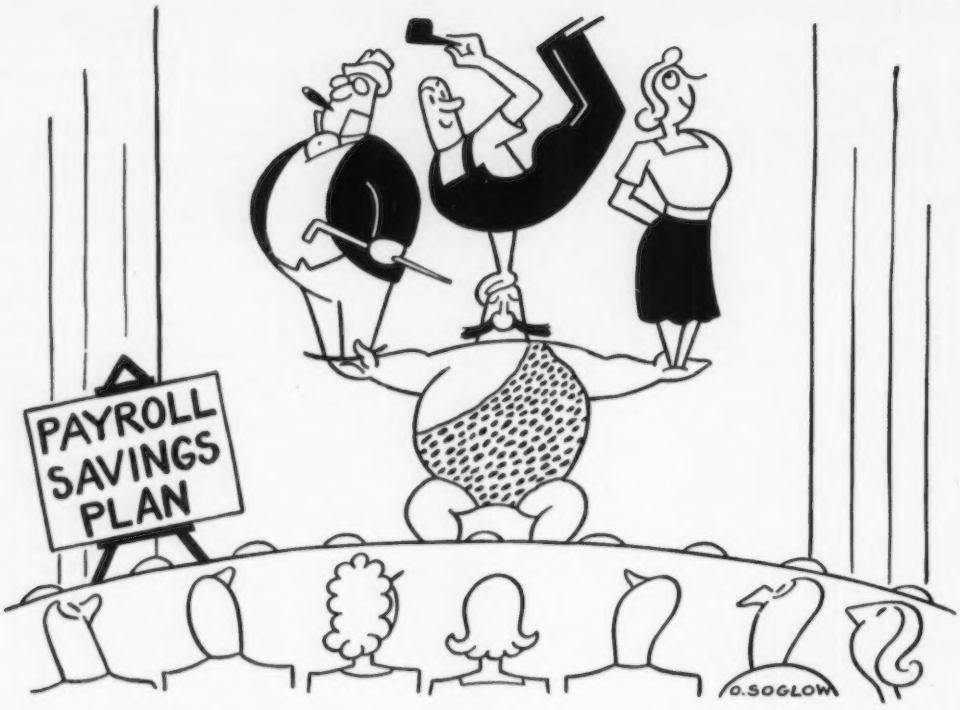
SALES REPRESENTATION

REPRESENTATION FOR SUBSTANTIAL MANUFACTURER

Long established following, central Illinois; Aggressive coverage. Merchants & Converters.

Box 50-1, care Paper Trade Journal. J-19

CLASSIFIED
ADVERTISING
BRINGS RESULTS



BOOST THE PLAN that boosts everybody's security!

Everybody who invests in U. S. Savings Bonds gains security for himself—*and contributes to the security of everybody else.* When you promote sales of Bonds through the Payroll Savings Plan in your company, you promote not only the security of your employees but the security of your company . . . your *own* security.

Sound like an idealistic economist's theory? The managements of more than 20,000 companies are proving it in practice.

Employees who get Savings Bonds regularly through Payroll Savings are building a sizable fund for their future needs. (As you know, at ten years these bonds return $4 for $3.) Whenever each worker gazes at his accumulation of Bonds, he realizes he's made a profit on his job. Moreover, he's aware he has a share in his country. He becomes increasingly resistant to any influences which might undermine our way of life.

Because he feels more secure, he quite naturally is also steadier and more efficient in his work.

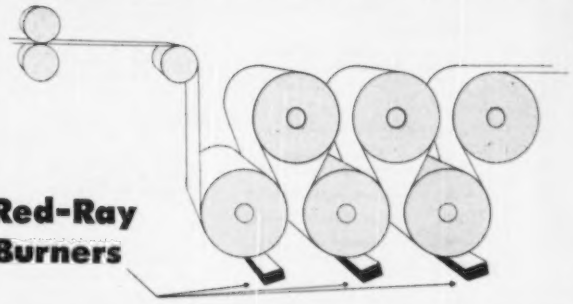
The Bond program is a powerful force in leveling-off boom and bust peaks and valleys. Bond sales spread the national debt. What's more, the billions of dollars in Bonds add up to a tremendous backlog of purchasing power—a boost for your future business.

It's easy to push Payroll Savings in your company with the help of your State Director, U. S. Treasury Department, Savings Bonds Division. Call him, or write the Savings Bonds Division, Treasury Department, Washington, D. C.

The Treasury Department acknowledges with appreciation the publication of this message by

PAPER TRADE JOURNAL

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.



RED-RAY BURNERS

FOR

Increased Drying Capacity

Red-Ray Burners will increase your drying capacity. Economical, efficient and easy to install. Automatic controls.

RED-RAY MANUFACTURING CO., INC.
455 W. 45th St. New York 19, N. Y.

The
Convention Number
of
PAPER TRADE JOURNAL
will be
February 23, 1950

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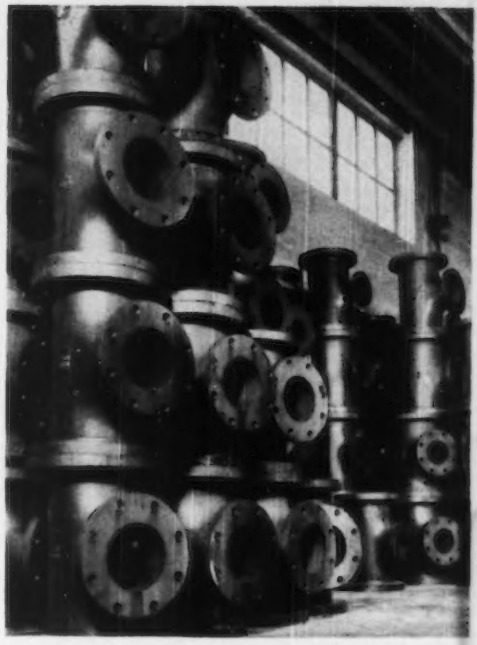

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PRESERVATIVES

E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY

Babcock & Wilcox Co.
The Bigge Boiler Works Co.

PRESSES

Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER

The Bauer Bros. Co.

PULP STOCK VALVES

Crane Company
Record Fdy. & Mach. Co.

PULPERS

American Paper Machy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.

PULPS

Brown Company
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc
Parsons & Whittemore, Inc.

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

PULPSTONES

Norton Company

PUMPS

American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS

Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES

The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS

Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS

The Dorr Company

RECOVERY SYSTEMS

Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Posey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS

The Appleton Machine Co.
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
The Smith & Winchester Mfg. Co.

REFINERS

Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS

American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESINS

American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS

American Cast Iron Pipe Co.
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride & Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Posey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS

The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Edward J. McBride & Co.
Stowe-Woodward, Inc.

ROLL STANDS

Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS

The Moore & White Co.

ROTARY BOILERS

The Biggs Boiler Works Co.

ROTARY STEAM JOINTS

Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS

The Goodyear Tire & Rubber Company

SATURANTS

American Anode Div.

SATURATING MACHINES

Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS

Bird Machine Company
Hardinge Company

SCALES

Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES

Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS

Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.

SHEET MACHINES

Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.

SHOWER PIPES

Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Smith & Winchester Mfg. Co.

SHREDDERS

Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING

American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Stein-Hall Co., Inc.

SIZING TESTER

W. & L. E. Gurley
Testing Machines, Inc.

SLIME CONTROL

The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.

SLITTERS

Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS

The Biggs Boiler Works Co.

SPLICING TISSUE

Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER

W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS

American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

STAINLESS STEEL

American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH

American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS

The Moore & White Co.

STEAM SPECIALTIES

Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Perfecting Service Corp.
Stickle Steam Specialties Co.

STEEL

Armco Steel Corp.
Carnegie-Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD

Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS

The Biggs Boiler Works Co.

STUFF CHESTS

Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Valley Iron Works Co.

SUCTION BOXES

Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works

SUCTION UNIT

Paper & Industrial Appliances Inc.

SULPHUR

American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS

Valley Iron Works Co.

SULPHUR DIOXIDE

American Cyanamid Co., Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS

The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES

American Anode Div.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS

The Brown Instrument Co.

TALC

American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS

The Biggs Boiler Works Co.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Waldron Corp., John

TEARING TESTERS

Testing Machines, Inc.

TENSILE TESTERS

B. F. Perkins & Son, Inc.
Testing Machines, Inc.

WHERE TO BUY

THICKENERS, DECKERS AND SAVEALLS

The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Valley Iron Works Co.

TITANIUM

American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

TOOLS

Walworth Company

TRACTORS & TRUCKS

Towmotor Corp.

TRANSMISSIONS

Link Belt Company
Stephens-Adamson Mfg. Co.

TRAPS

Armstrong Machine Works
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBES

Babcock & Wilcox Co.
National Tube Co.

TUBING, MECHANICAL

National Tube Co.

TUBS

Rodney Hunt Machine Co.
Valley Iron Works Co.

TURBINES

Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

USED EQUIPMENT

Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.

VALVES

The Bristol Company
The Brown Instrument Co.
Crane Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

WASHERS

Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT

The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING

Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.

WATER DISPERSIONS

American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER SOFTENERS

Hungerford & Terry, Inc.

WAXING MACHINERY

Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Waldron Corp., John
Weber, Herman G.

WELDING EQUIPMENT

General Electric Company
Walworth Company

WET MACHINES

Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS

American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE

Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.

Hungerford & Terry, Inc.

WINDERS AND REWINDERS

The Appleton Machine Co.
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WIRE BRUSHES

M. W. Jenkins Sons Inc.

WIRES

Appleton Wire Works
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES

Williams-Gray Co.

WOOD SPLITTERS

The Appleton Machine Co.
Carthage Machine Co.

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EAST STROUDSBURG, PA.

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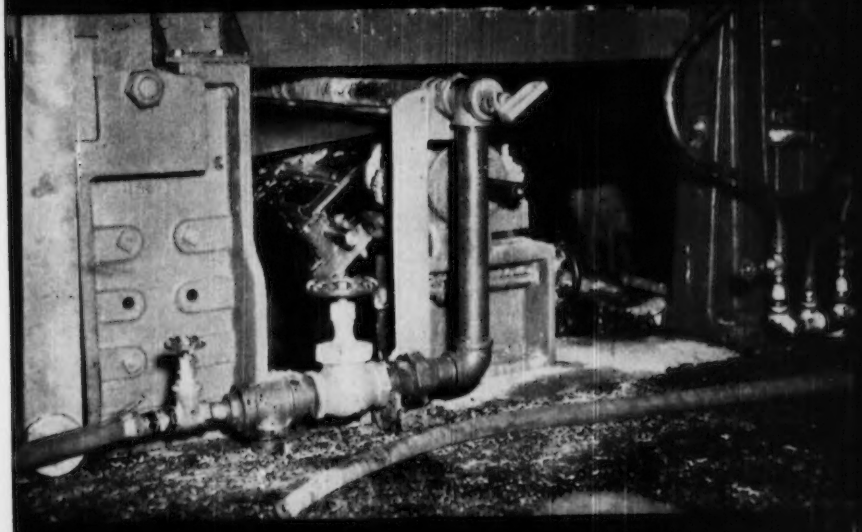

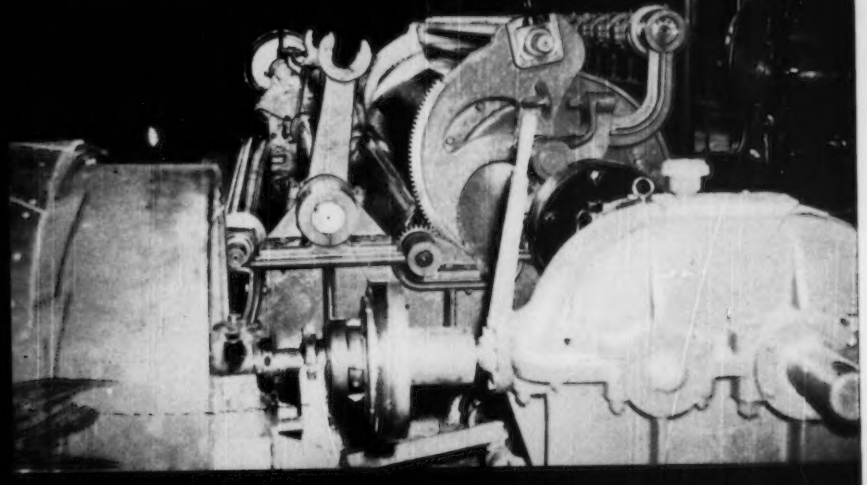

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